HBJ A Harcourt Brace Jovanovich Publication November 1981/$2.00

WEEDS TREES & TURF

Turf Vehicle Maintenance and Specifications

Profiles of 1981 Award Winning Commercial Landscapes

Landscape Photography to Support Contest Entries

THE INDUSTRY'S LARGEST GOLF CIRCULATION

THANKS FOR MAKING RAIN BIRD THE NUMBER ONE RAINMAKER. ON EARTH.

No one else on earth outsells Rain Bird when it comes to irrigation.

Our new Mini-PAW™ sprinkler is one of irrigation history's biggest success stories.

Our super family of controllers outsells our entire competition.

And over 95% of you, the landscape architects of America, specify Rain Bird® products day in and day out. Needless to say, we're pretty proud.

But you don't get to be the number one seller on earth by pride alone.

We've worked hard since 1933, always mindful that to keep our business growing, we've got to keep your business growing.

Which is why, for the better part of 50 years, we've never been satisfied just to keep current with our products and technology. We always like to push a little harder into the future than anyone else.

The philosophy has proven successful year after year.

So thank you, landscape architects. Keep up the good work.

With your help and support, we'll always be earth's Number One.

RAIN BIRD®

BRINGING NEW IDEAS TO LIFE.

Circle No. 131 on Reader Inquiry Card

7045 N. Grand Avenue, Glendora, CA 91740

® Rain Bird is a registered trademark of Rain Bird Sprinkler Mfg. Corp., Glendora, California. © 1980 Rain Bird Sprinkler Mfg. Corp.

The new Ditch Witch 1420 has features no machine in its class can match.

It can dig trench 5 feet deep*. It's steerable. It offers a choice of both gasoline and diesel engines, yet it's trim enough to take through a standard yard gate.

The 1420 also is the easiest to operate trencher in its class. Controls are easy to understand, easy to reach. Everything is accessible from one spot.

It has hydrostatic drive that can be fine tuned to exactly the right slow speed during trenching, or that can move around the job site at up to 2 mph. One lever controls steering and ground drive direction and speed.

The digging chain is raised and lowered hydraulically. The digging chain drive is mechanical for the most efficient use of available power. An optional outboard bearing support adds extra strength for trenching in tough soil conditions. Since the drive wheels are steered, limited direction control during trenching is possible – another exclusive.

There's even an optional boring attachment for making short bores under walks or other obstacles.

These are just the highlights. There are plenty more features and options that make the 1420 the best buy in its class. And, of course, you get built-in Ditch Witch quality and parts and service from the best dealer organization in the industry.

Let your dealer arrange a demonstration. Or call for free literature, Toll Free (800) 654-6481.

*Trench width and depth depends on boom and chain set up.

The Charles Machine Works, Inc.
P.O. Box 66, Perry, Oklahoma 73077
Phone: (405) 336-4402

easy.

The Ditch Witch 1420...the only steerable 14-HP-class walk-along trencher that can go through a 36-inch gate.

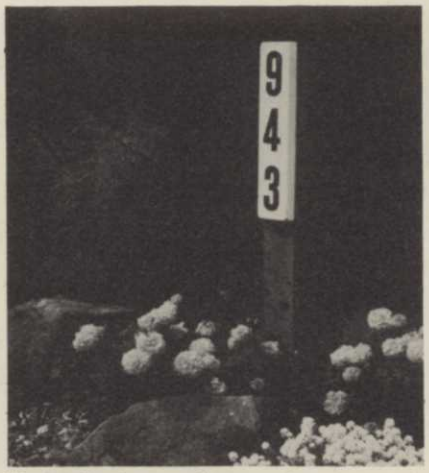
Ditch Witch®

Circle No. 110 on Reader Inquiry Card

WT&T

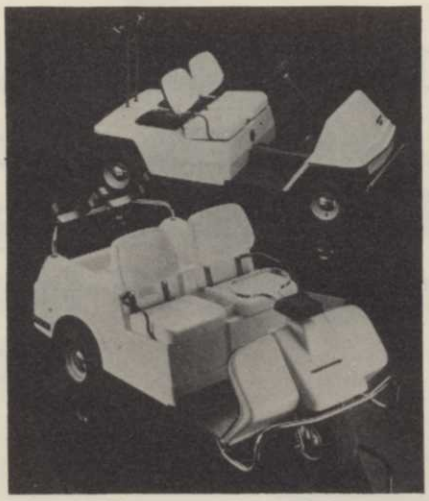
Cover: This photograph helped Dow Gardens of Midland, Michigan win a 1981 Environmental Improvement Award. See story on page 24. Photo by Douglas Chapman.

NOVEMBER 1981/VOL. 20, NO. 11



Keys to landscape photography.

Award winning Marriott headquarters.



Sales should increase as fleets fail.

24
Landscape Photography: Shooting to Win Awards

Nearly every landscape award program requires 8 or more photos to accompany entries. The photography can mean win or lose.

30
Profiles of Winning Commercial Landscapes

When the landscape contractor implements the architect's design objectives, the result wins awards. This year's commercial winners.

42
Golf Car Sales Improve As Older Fleets Fail

Golf courses struggle to get more than four years out of a golf car fleet. Time is running out on many courses in the U.S.

Knowledge of vehicle's limitations can stretch use.

48
Turf Vehicle Maintenance Includes Knowing Limits

Maintenance instructor Ed Combest of Lake City Community College, Florida, gives advice on keeping turf vehicles in shape.

54
The Forgotten Trees: Sassafras, Catalpa, Alder

These trees are often overlooked by the trade, but have benefits which make them worthy of consideration.

DEPARTMENTS

Outlook — 5
Green Industry News — 6
Golf Update — 12
Landscape Update — 14
Government Update — 18
Vegetation Management — 58
Events — 60
Letters — 64
Products — 69
Classifieds — 75
Advertiser Index — 76

Robert L. Edgell, Chairman; Richard Moeller, President; Lars Fladmark, Executive Vice President; Arland Hirman, Treasurer; Thomas Greney, Group Vice President; Ezra Pincus, Group Vice President; Larry Witchel, Group Vice President; Joe Bilderbach, Vice President; James Gherna, Vice President; George Glenn, Vice President; Harry Ramaley, Vice President.

WEEDS TREES & TURF (ISSN 0043-1753) is published monthly by Harcourt Brace Jovanovich Publications, Corporate and Editorial offices: 757 Third Avenue, New York, New York 10017. Advertising offices: 757 Third Avenue, New York, New York 10017, 111 East Wacker Drive, Chicago, Illinois 60601 and 3091 Maple Drive, Atlanta, Georgia 30305. Accounting, Advertising Production and Circulation offices: 1 East First Street, Duluth, Minnesota 55802. Subscription rates: one year, $15 in the United States and Canada. All other countries: one year, $40. Single copies: $2 in the United States and Canada; all other countries: $4.50. Controlled circulation postage paid at Cleveland, Ohio 44101. Copyright© 1981 by Harcourt Brace Jovanovich, Inc. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher.

POSTMASTER: Send Form 3579 to WEEDS TREES & TURF, Box 6198, Duluth, Minnesota 55806.

A HARCOURT BRACE JOVANOVICH PUBLICATION

EXCEL HUSTLER

Infinite maneuverability within its own radius with total control in the palm of one hand!

The HUSTLER'S exclusive dual-hydrostatic drive system and twin lever steering provides independent control of each drive wheel. This counter-rotating capability of the drive wheels permits infinite maneuverability within its own radius to maneuver around any obstacle or contour. Gives one-hand control of speed, forward, reverse, turning and braking. Eliminates steering wheels, linkage, foot pedals, brakes, chains, sprockets and their maintenance. The dual-hydrostatic system operates at lower psi for longer life.

An EXCEL HUSTLER is designed for year 'round use, making it the investment that pays off in lower operating costs, superior performance and time savings. Less operator effort is spent maneuvering around obstacles and on daily servicing so productivity increases.

Three heavy-duty HUSTLER models are available:

1. HUSTLER 275 (20 or 23 hp gas)
2. HUSTLER 295 (25 hp gas)
3. HUSTLER 305 D (27.5 hp high efficiency diesel)

Attachments for all these HUSTLER models include the new 72" 3-way offset mower deck that mulches, discharges side or rear, a 60" flail mower, 72" heavy duty deck, edger, 54" snow thrower, 60" V-blade, 60" or 72" dozer blade, 60" rotary broom, utility scoop, ROPS/Cab and more. **Call toll free 1-800-835-3260,** or write for information.

The choice of the Pros.

EXCEL HUSTLER
Turf & Grounds Equipment

GPW-6-181

EXCEL INDUSTRIES, INC. • BOX 727 • HESSTON, KANSAS 67062 • (316) 327-4911 • (800) 835-3260

Circle No. 113 on Reader Inquiry Card

POUR IT ON... BULK IS BETTER

Just open your spreader as wide as it can go. That's the way Milorganite is intended to be applied.

Milorganite is goof proof. It does not burn, and naturally organic Milorganite provides all the nutrients needed for healthy turf...just the way you want to keep it always.

Start your turf **today** on its way to a longer prime of life with Milorganite

MILORGANITE

The Golf Course Choice

THE MARGIN OF SAFETY

Milorganite does not burn and is almost impossible to over-apply.

DO NOT USE ON EDIBLE CROPS

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT, 735 N. WATER ST., MILWAUKEE, WI 53202

Circle No. 142 on Reader Inquiry Card

WT&T

Executive Editor **Bruce F. Shank**
Associate Editor **Thomas Paciello**
Group Vice President
Tom Greney
Production Manager
Sherrill Munson
Production Supervisor
Marilyn MacDonald
Graphic Design
Denise Johnson
Circulation Manager
Agnes Aspling
Directory Coordinator
Patty Rusch
Reader Service Manager
David Peterson
Promotion Director
Julie Laitin

OFFICES

ATLANTA
3091 Maple Drive
Maple Center One Building
Atlanta, GA 30305
(404) 233-1817

NEW YORK
757 Third Ave.
New York, NY 10017
Editorial: (212) 888-2563 (or 2892)

CHICAGO
11 East Wacker Drive
Chicago, IL 60601
(312) 938-2344

SEATTLE
Robert Mierow
1333 N.W. Norcross
Seattle, WA 98177
(206) 363-2864

DULUTH
120 West Second Street
Duluth, Minn. 55802
(218) 727-8511

MARKETING REPRESENTATIVES

James R. Brooks
Atlanta (404) 233-1817

Ron Kempner
Atlanta (404) 233-1817

Robert Mierow
Seattle: (206) 363-2864

member

Member; American Business Press, Business Publications Audit, National Golf Foundation, American Sod Producers Association, Associated Landscape Contractors of America, National Landscape Association, Horticultural Research Institute.

WT&T

OUTLOOK

By Bruce F. Shank, Executive Editor

Mrs. Reagan is escorted by AAN Executive Director Robert Lederer (left) and AAN President Henry Weller (right) into the award ceremony.

AAN's example is worth copying for turf groups

As I sat in the East Room of the White House, 25 ft. from Mrs. Reagan, I could not help but be impressed with the American Association of Nurserymen's sophistication and clout in Washington, D.C. No doubt, it was a magnificent performance with AAN Executive Director Bob Lederer in special form. AAN has truly won over the past six administrations with the importance of landscaping and the businesses which supply it.

AAN is termed the "umbrella group" with close control over the National Landscape Association, the Wholesale Nursery Growers of America, Garden Centers of America, National Association of Plant Patent Owners, and the Horticultural Research Institute. Through the Allied Landscape Industry Council, AAN works with ALCA, PGMS, NAA, ISA, PLCAA, GCSAA and other landscape groups.

Over the years, I've attended a number of organizational meetings for an International Turf Association. Factions and bylaw differences kept the organization from getting off the ground. The desire was there but the support of the power groups was less than adequate to make it happen.

The impressive growth of the Professional Lawn Care Association of America has added to the importance of the turf industry. The staff of GCSAA, ALCA, and PGMS now recognize PLCAA as a definite power in the turf industry.

The turf industry would benefit from these groups cooperating to establish a stronger identity for turf. Things like a Washington lobbyist, a turf marketing council, and turf research fund would clarify the national image of the turf market. A member need not join another association to get improved representation in government and industry. Cooperation between existing associations, under a separate, joint organization, could do the trick. The first move has to be made by either GCSAA or PLCAA however. **WTT**

GREEN INDUSTRY NEWS

Mrs. Reagan presents landscape awards

First Lady Nancy Reagan presented Award Plaques to more than 75 landscape contractors, architects, and property owners in September during the 26th Landscape Award Program. It was the 10th time a First Lady has presented the awards and the sixth time the event was held in the White House.

Nearly 300 industry representatives observed the ceremony in the East Room. Mrs. Reagan presented the awards as American Association of Nurserymen Executive Director Robert Lederer announced the winners. The precision-planned event took the scheduled 25 minutes without a hitch.

The group met at the East Gate of the White House early in the afternoon. They were led through the Executive Office Wing to the East Room where a brass ensemble played. At precisely 3 p.m. the music stopped and Lederer, AAN President Weller, and Mrs. Reagan entered the room. Mrs. Reagan said, "Now that I have all of you here, I'd like your advice." She mentioned the President's attraction for the outdoors and her fondness for gardens. Both award winners and observers were impressed with her sincerity, naturalness, and casual remarks.

Following the award presentations, Mrs. Reagan shared iced tea with the group and gave them each a Blue Angel Holly. Before and after the ceremonies the visitors could roam the rooms in the first floor of the White House and view the art work and historical items of past presidents.

The event takes place every other year and began in 1950. There is little doubt the nursery and landscape industry gains recognition and respect from this event.

The night before the award ceremony, a reception was held for the winners by Presidential Advisor Ed Meese. He chatted easily with everyone in the reception line. Winners and observers went home impressed and glad to have had the opportunity to visit the White House and meet the First Lady.

INTERNATIONAL

World turf experts gather in Canada

Turf experts from 21 countries got together at the University of Guelph, Canada, in July for the Fourth Research Conference of the International Turfgrass Society.

The purpose of the meeting was for international educators and researchers to compare notes. More than 70 papers were presented and will be published as a proceedings. Nearly 250 delegates travelled from United Kingdom, Switzerland, Denmark, West Germany, France, Japan, Australia, the Netherlands, and other places to attend the meeting. Tours before and after the conference acquainted delegates with Canadian and United States golf courses, parks, athletic facilities, and research centers. A tour of the seed production areas of Canada and the U.S. followed the meeting.

The Fifth Meeting of ITS will be held in 1985 in France. Toro's Jim Watson was appointed a director, and R.E. Schmidt and J. Shoulders of Virginia Polytechnic Institute in Blacksburg are officers. The new president is Paul Mansat of France and H. Vos of the Netherlands is vice president.

A representative from the U.S.S.R. attended the conference for the first time. G.G. Abramashvili of the Turfgrass Research Section of the USSR Sportscommittee in Moscow is responsible for more than 400 stadia in Russia and was responsible for the Olympic stadium during the Moscow games in 1980.

Abramashvili said the primary turfgrass used for sports turf in the USSR is a mixture of Baron, Merion, and perennial ryegrass and red fescue. Most turf equipment is American made.

Persons interested in a copy of the proceedings should contact C.M. Switzer, University of Guelph, Dept. of Hort. Science, Guelph, Ontario, Canada N1G 2W1.

continues on page 12

Comparing the Guelph turf plots to their own back home are (left to right) Euel Coats of Mississippi State University, Jack Eggers of the University of Guelph, and R.V. Sturgeon of Oklahoma State University.

PENNEAGLE Creeping Bentgrass

The grass that re-greened Butler National

A devastating grass disease virtually destroyed the greens at Butler National Golf Club, Oak Brook, Illinois, home of the *Western Open*, shortly before the 1980 tournament. The Butler Board of Directors decided to replace the grass on all greens and after viewing several varieties of bentgrass in the Chicago area, they selected Penneagle Creeping Bentgrass for the restoration program.

Dr. Joseph M. Duich, professor of Turf Science, Penn State University, and developer of Penneagle bent was called in as a consultant. Working closely with Oscar Miles, Course Superintendent, the reseeding of Butler National was begun in mid-August 1980. Before the project was completed, the entire course was seeded to Penneagle Bentgrass.

By November the course was pronounced in excellent condition and by the 1981 Western Open the course drew raves from players and spectators alike.

The TEE-2-GREEN CORP., marketers of Penneagle and Penncross bentgrass has published a booklet complete with photos of the Butler restoration program. The step by step program at Butler is available free of charge.

For your copy write:

Tee-2-Green Corp.
Information Coordinator
1349 Capitol St. N.E.
Salem, Oregon 97303
Phone: (503) 363-1022

For name of your nearest dealer, call:

Tee-2-Green Corp.
P.O. Box 250
Hubbard, Oregon 97032
Toll Free: 1-800-547-0255
TWX: 510-590-0957

PENNEAGLE
CREEPING BENTGRASS

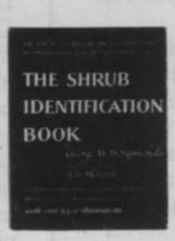
Circle No. 139 on Reader Inquiry Card

Circle No. 145 on Reader Inquiry Card

Bookstore

385 - TREES FOR ARCHITECTURE AND THE LANDSCAPE by Robert L. Zion
A book of photographic tree definitions, or portraits, intended to facilitate communication between the landscape architect, the architect and the layman. **$11.95**

665 - THE OXFORD ENCYCLOPEDIA OF TREES OF THE WORLD - Bayard Hora, Editor
An authoritative reference describing the principal trees of the world. Includes biology and growth of trees, ecology of different types of forest, forest management, timber usage, and pest and disease control. **$24.95**



710, 720 - SHRUB IDENTIFICATION by George Symonds
Pictorial key to identify shrubs. Contains more than 3,500 illustrations to check specimens. Popular and botanical names are given for each shrub with handy index tabs for quick reference. **$18.00 hardcover, $8.00 paperback**

510 - HORTUS THIRD from Cornell University
A 1,300-page concise dictionary of plants cultivated in the United States and Canada. A reference which every horticultural professional should have. **$99.50**

530 - INTERIOR PLANTSCAPING by Richard Gaines
One of the first handbooks directed at the professional interior plantscaper. Includes design and maintenance clues for foliage. **$28.50**

540 - INTRODUCTION TO FLORICULTURE by Roy Larson
Text is divided into two sections—one covering cut flowers, the other potted plants. Propagation, plant culture, pest control and individual considerations are given for chrysanthemums, carnations, roses, snapdragons, orchids, gladiolus, bulbous plants, azaleas, pot mums, poinsettias, Easter lilies, gleseniads, hydrangeas, cyclamen, begonias, kalanchoe and other flowering pot plants, bedding, hanging and foliage plants. **$29.50**

740 - TREE FARM BUSINESS MANAGEMENT by James Vardaman
A guide to help you increase profits from tree farming. Major problems confronting large and small tree farms and how to meet them including recommendations for seeking out accountants, lawyers and other professionals. **$20.50**

550 - PLANT PROPAGATION by Hudson Hartmann
Up-to-date coverage of all phases of plant propagation by seeds, cuttings, grafting, budding layering, division and tissue culture propagation. Emphasis on the most recent developments in propagation methods, equipment and related subjects such as disease prevention. **$24.95**

480 - GREENHOUSE MANAGEMENT FOR FLOWER & PLANT PRODUCTION by Kennard Nelson
Approaches business from two aspects - the soil environment and air environment and stresses their interrelationship. Management of business procedures, physical facilities and marketing are discussed as well as the importance of crop rotation and scheduling. **$15.35**

ADDITIONAL TITLES

410 - DISEASES & PESTS OF ORNAMENTAL PLANTS $26.50
660 - DISEASES OF SHADE TREES $23.50
610 - DISEASES OF TURFGRASS $30.00
420 - EXOTIC PLANT MANUAL $37.50
440 - FUNDAMENTALS OF ENTOMOLOGY & PLANT PATHOLOGY $22.00
450 - GARDENING IN SMALL PLACES $7.95
490 - GREENHOUSE OPERATION & MANAGEMENT $19.95
670,680 - GUIDE TO TREES $19.95 hardcover, $8.95 paperback
350 - HANDBOOK OF LANDSCAPE ARCHITECTURAL CONSTRUCTION $48.50
690 - INSECTS THAT FEED ON TREES & SHRUBS $42.50
545 - MODERN WEED CONTROL $18.50
700 - THE PRUNING MANUAL $14.95
730 - TREE CARE $8.95
750 - TREE IDENTIFICATION $9.00
760 - TREE MAINTENANCE $29.95
770 - TREE SURGERY $18.95
650 - TURFGRASS MANAGEMENT $17.95
640 - TURF IRRIGATION MANUAL $22.95
620 - TURF MANAGEMENT HANDBOOK $14.65
560 - WEED SCIENCE $24.00
570 - WESTCOTT'S PLANT DISEASE HANDBOOK $34.50
580 - WYMAN'S GARDENING ENCYCLOPEDIA $29.95

CLOSEOUTS

ORDER THESE TITLES AT SPECIAL REDUCED PRICES!

430 - FLOWER & PLANT PRODUCTION $13.60
590 - FUNDAMENTALS OF SOIL SCIENCE $19.15
460 - GREENHOUSE ENVIRONMENT $21.20
470 - GREENHOUSE GROWER $12.40
500 - HORTICULTURAL SCIENCE $18.70
520 - HOW TO GROW HEALTHY HOUSEPLANTS $5.05
770 - MANAGEMENT OF ARTIFICIAL LAKES & PONDS $16.95
600 - SOIL & SOIL MANAGEMENT $11.90

Mail this coupon to: Book Sales
Harcourt Brace Jovanovich Publications
One East First Street, Duluth, MN 55802

Name_____
Address_____
City_____ State_____ Zip_____
Signature_____ Date_____
Phone Number_____

Please send me the following books. I have enclosed a check* for the total amount.
Please charge to my Visa, Master Card or American Express (circle one)
Account Number_____ Expiration Date_____

ORDER NUMBER	QUANTITY	PRICE	TOTAL PRICE

*Please add $2.50 per order plus 25¢ per additional copy for postage and handling. _____ (postage & handling)

Please allow 6-8 weeks for delivery
Prices subject to change.
Quantity rates available on request

Total Enclosed _____

WTT11

GOLF UPDATE

Harley-Davidson managers buy from AMF

Members of the Harley-Davidson management team have purchased the Harley-Davidson Motor Co., Milwaukee, WI, from AMF Corp. for an undisclosed sum.

The management group was led by former AMF vice president and motorcycle products group executive Vaughn Beals, who has been named chairman of the board and chief executive officer of the stand-alone company.

The purchase, which comprised an undisclosed amount of cash and securities, included all Harley-Davidson facilities in Wisconsin and related facilities in York, PA; motorcycle and golf car divisions; parts and accessories division; and related assembly operations.

New officers of the company include: Charles Thompson, president and chief operating officer; Jack Hamilton, Chris Sartalis, Jim Paterson, Kurt Woerpel, Peter Profumo, Jeffrey Bleustein, Thomas Gelb, William Davidson, and Tim Hoelter, all vice presidents. The president of the divisions are: John Davidson, golf; David Caruso, parts and accessories; Ralph Swenson, York; and David Lickerman, Harley-Davidson International.

"We see this as a unique business opportunity," said Beals, "Harley-Davidson is known worldwide and an increasingly broad spectrum of people are now turning to motorcycling for recreation and fuel-efficient transportation.

In 1980 Harley-Davidson had a 17% gain on sales of $290 million.

GCSAA begins seminar series

The Golf Course Superintendents Association of America began its seminar series in October with two separate programs. The first is an Insect Identification and Control seminar taught by Dr. Harry Niemczyk of the Ohio Agricultural Research and Development Center. Niemczyk is a leading entomologist in the U.S. and a specialist in turf. Dr. Houston Couch of Virginia Polytechnic Institute, Blacksburg, is teaching a seminar on turf diseases. Both seminars are being held on the East Coast from Massachusetts to Maryland.

The seminar series is the first expansion of GCSAA's educational program as directed by the Education Committee during a meeting in April and at last year's convention in Anaheim. The association plans to significantly broaden its educational efforts in the next three years. Some of the new programs may benefit non-golf turf managers.

In an article in the September issue of *Golf Course Management*, GCSAA Executive Director James McLoughlin said the association plans more use of audio/visual programs, manuals, seminars and correspondence courses to meet the growing demand for information by its members. He said educational efforts will extend beyond agronomic topics to business planning, computers, career planning and public golf operations. Educational sessions at the annual show in New Orleans will reflect this new direction in training, McLaughlin promised members.

Club membership rises, up from 1970's

Total membership for country and city clubs rose by 4%, according to Patrick O'Meara, national director of club services at Pannel Kerr Forster. The largest growth in membership took place in the East with a 5.7% increase, in contrast to the South which reported only a 0.5% rise.

O'Meara stated that total revenues for country clubs grew by 10.7% last year, offsetting a 10.5% increase in operating costs and expenses. In 1980 golf course maintenance costs climbed by 10.9% and have more than tripled in the last 20 years.

O'Meara said the increase contrasts with membership losses in the 1970's.

News *from page 6*

LANDSCAPE

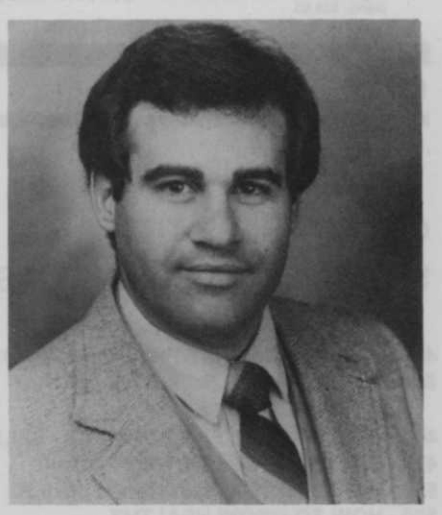
Los Angeles opens trouble-shooting agency

Los Angeles has opened a "one-stop" County Land Development Coordinating Center, designed to reduce the cost of delay in obtaining required building permits.

The center was created to streamline Los Angeles County development approval procedures by providing information, advice and guidance to individuals and developers on the requirements involved in processing plan amendments, zone changes, variances, conditional use permits and subdivisions. The center, located in the Hall of Records, received unanimous approval from the Los Angeles County Board of Supervisors and is expected to encourage the development of new housing.

According to Supervisor Michael Antonovich, the center could cut processing time from at least three months to as much as eight months. He added that conservatives estimates are that for each month of delay, two percent is added to the cost of housing. Antonovich pointed out that on a $100,000 unit financed with a conventional 30-year loan at 15 percent, the immediate savings would be $16,000.

The center will operate on an experimental basis for one year, at which time an independent evaluation will be conducted to determine whether or not to continue and possibly expand the program.



Rain Bird Sprinkler Mfg. Corp., Glendora, CA, has promoted Steve Springer to product manager for the turf division. Springer will be involved in the development and coordination of new irrigation products for the company's turf market.

Continues on page 14

A great ryegrass is handsome, tough, mows nicely and germinates in 5-7 days.

turf-type perennial ryegrass

is a great ryegrass.

Of course, the beauty, durability and mowing qualities of Derby turf-type perennial ryegrass aren't its only fine qualities.

Over the years, in a variety of locations and under widely varying conditions, Derby has proven itself a very consistent performer – a grass that will flourish without pampering.

Derby produces a dense, persistent turf when cut to 3/16 inch for specialized uses such as golf greens, at standard cuts of 1 - 1½ inches for home lawns, parks and playgrounds, or ¾ inch on golf course fairways or tees.

It also mixes well with bluegrass or fine fescue, tolerates a wide range of soil types from heavy clay to sandy and retains its deep green color when used as a winter overseeding grass for dormant native Southern grass.

Derby is registered with the Plant Variety Protection Office. PVA No. 7500009.

INTERNATIONAL SEEDS, INC.

P.O. Box 168, Halsey, Oregon 97348 U.S.A.
Telephone (503) 369-2251 TWX 510/590-0765

Circle No. 117 on Reader Inquiry Card

LANDSCAPE UPDATE

Irrigation effects outlined in paper

A paper by Jerry Robertson, Department of Horticulture, Ohio State University, has charted the potential impact of watering bans on the landscape industry. Robertson said 90 percent of the industry's firms are located in drought affected areas, with more than 50 percent in the states of Pennsylvania, New York, Ohio, California, and Florida.

The problem is more distribution of rainfall than amount of rainfall. Furthermore, less than 1 percent of water used in the U.S. goes toward irrigating landscape plants.

A ban on irrigation could damage more than $500 billion worth of residential and commercial landscaping in the U.S. Certainly there is reason to study risks versus benefits of landscape irrigation bans.

First massive reclamation program

Secretary of the Interior James Watt has announced that West Virginia will receive a grant of $2.27 million to correct major damage caused by earlier surface mining. The grant is the first major use of funds collected from mine operators under the Surface Mining Control and Reclamation Act.

West Virginia has nearly 180,000 acres of unreclaimed abandoned mine land and 3,100 miles of streams damaged by mining practices. The state plans to spend more than $30 million on reclamation of old sites in the future.

The state's Department of Natural Resources has selected 11 projects in eight counties for funding.

Council offers tree appraisal aids

The Council of Tree & Landscape Appraisers are assisting landscape professionals in calculating and reporting tree and plant values to their customers with new forms.

Dr. L.C. Chadwick, chairman of CTLA, said the forms, "Seem to meet the working needs we all encounter in making tree evaluations. They help to enhance the professionalism of the appraiser."

Documentation not only proves invaluable during insurance claims, but supports the investment in tree maintenance. Forms are available from CTLA, 232 Southern Building, Washington, D.C. 20005. The cost is $1 each for up to 50 copies, 75 cents for 50-100, and 50 cents for more than 100.

Landscape architect directory is free

The 1981 National Directory of Landscape Architecture Firms is available free of charge to individuals, corporations, and government agencies interested in contracting for landscape architectural services. The 140-page directory lists firms by alphabetical order, geographic location, and specialty. It also lists representative projects of each firm for reference purposes. The publication is available from the American Society of Landscape Architects, 1900 M St. NW, Washington, D.C. 20036.

ASLA meets in Washington D.C.

A program for small to large landscape architectural firms has been arranged for November 21-24 at the Washington Hilton Hotel. Architecture students are also welcome at this annual event.

Although the new headquarters building will not be completed as planned when the meeting was first scheduled, the fire damage has been removed and renovation is again underway.

Special sessions will cover managing the small firm, marketing, energy conservation, historic preservation, technology of tomorrow, and financial planning. Contact ASLA for more information.

News *from page 12*

WEEDS

Extension specialists publish colorful aquatic weed bulletin

Bulletin 839, *Identification and Control of Weeds in Southern Ponds*, has been published by the Georgia Cooperative Extension Service, in cooperation with U.S. Department of the Interior, Fish and Wildlife Service. The bulletin features 47 four-color photographs and a descriptive text written by two extension specialists. George W. Lewis, an extension fisheries specialist, and James F. Miller, an extension agronomist-weeds science specialist collaborated on the 28-page bulletin.

The Fish and Wildlife Service funded the preparation and printing as a result of a cooperative agreement to provide fish and wildlife extension services.

Copies of the publication can be obtained from two sources: United States Department of the Interior, Fish and Wildlife Service, 75 Spring Street, S.W. Alanta, GA 30303 or Publications Editor, Georgia Cooperative Extension Service, University of Georgia, Athens, GA 30602.

SOD

Southland Sod Farms adds Thomas McClure

Southland Sod Farms, Camarillo, CA, has added Thomas McClure to its customer relations/sales staff.

Prior to his move to Southland, McClure was a territory manager for Amfac Garden Cal Turf and a horticulture instructor for the North Orange County Regional Occupational Program for four years. He entered the landscape/nursery industry in 1973 as a branch manager with Roger's Gardens.

Continues on page 23

NOW YOU CAN CHANGE FROM FORWARD TO REVERSE WITHOUT TOUCHING THE GEARSHIFT.

It's not as impossible as it sounds. Not with the help of a manual shuttle shift.

Which is exactly what our two new tractors feature.

It means you can move from forward to an equivalent reverse gear by simply disengaging the clutch, stopping the tractor, and then pulling the shuttle lever down. That's it.

Up there on the left is the L235, ideal for all grounds maintenance chores.

While hard at work down on the farm is the L275.

Both tractors have water-cooled diesel engines.

The L235 gives you 23.5 hp,* while the L275 with live rear PTO produces 27.5 hp.*

And both tractors have standard features that include rear wet disc brakes, a 3-point Category I hitch and a 7.4 gallon fuel tank.

Whether you have 2- or 4-wheel drive, power steering is up to you.

Any of the dealers in our nationwide sales and service network will certainly help you decide.

So why not visit one of them?

Or for more information, write to us at Kubota Tractor Corporation, Communications Department, P.O. Box 7020, Compton, California 90224.

With new products like the L235 and the L275, you'll agree we're a company that's going forwards.

©1981 Kubota Tractor Corporation

*Gross engine hp manufacturer's estimate.

KUBOTA

We're looking for work.

Circle No. 120 on Reader Inquiry Card

CHIPC

LONG-LASTING CHIPCO® 26019 IS STRONG MEDICINE.

If you're serious about protecting your turf against diseases, give it your best shot. Spray Chipco 26019 fungicide. Thousands of superintendents have switched to Chipco 26019 in the past two years. And no wonder. Chipco 26019 gives you the longest residual. You can cut the number of sprays in your program, and that cuts your costs. And Chipco 26019 prevents the major turf diseases with unsurpassed effectiveness. You'll get good results with Chipco

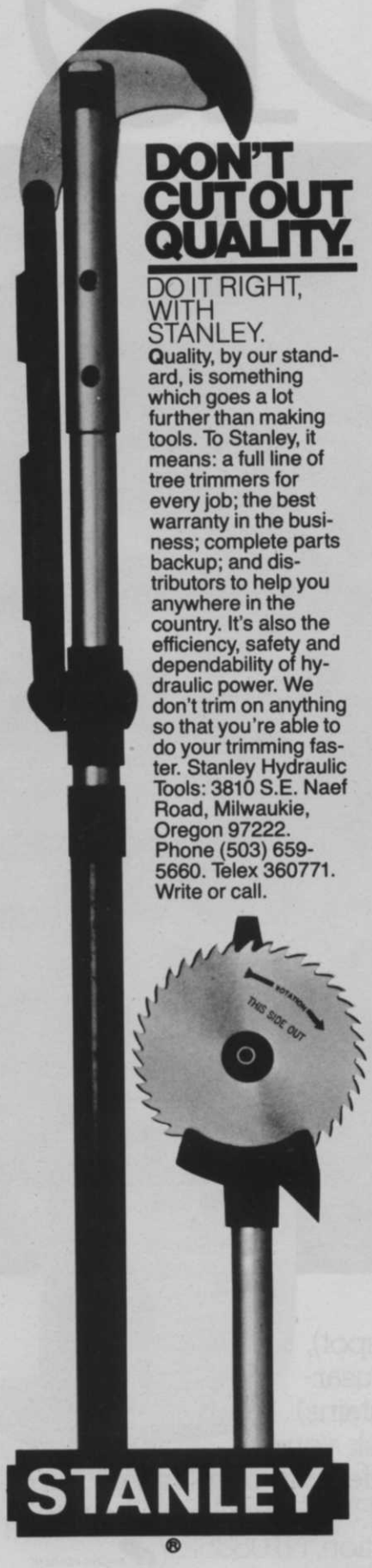
Please read label carefully, and use only as directed.

D® 26019

26019 against dollar spot (including benomyl-resistant dollar spot), Helminthosporium (leaf spot and melting out), brown patch, Fusarium blight and Fusarium patch (west of the Cascade Mountains). Chipco 26019 also suppresses grey and pink snow molds. Ask your Chipco distributor or Rhône Poulenc representative about effective, long-lasting Chipco 26019...the strong medicine in turf disease prevention. Rhône Poulenc Chemical Co., Agrochemical Div., Rhône Poulenc Inc. Monmouth Junction, NJ 08852.

RHÔNE-POULENC

Circle No. 132 on Reader Inquiry Card



DON'T CUT OUT QUALITY.

DO IT RIGHT, WITH STANLEY.

Quality, by our standard, is something which goes a lot further than making tools. To Stanley, it means: a full line of tree trimmers for every job; the best warranty in the business; complete parts backup; and distributors to help you anywhere in the country. It's also the efficiency, safety and dependability of hydraulic power. We don't trim on anything so that you're able to do your trimming faster. Stanley Hydraulic Tools: 3810 S.E. Naef Road, Milwaukie, Oregon 97222. Phone (503) 659-5660. Telex 360771. Write or call.

STANLEY®

Circle No. 138 on Reader Inquiry Card

GOVERNMENT UPDATE

Silvex disposal cost to top $12 million

Almost three years ago (Feb. 79), EPA issued an emergency suspension of the forestry, rights-of-way and pasture uses of the herbicide 2,4,5-T and all the registered uses of silvex, another phenoxy herbicide. The emergency suspension called for immediate discontinuation of manufacture, sale and use of the chemicals.

EPA and Dow Chemical, the chief producer of 2,4,5-T, are discussing ways to resolve differences on that herbicide or to finally cancel or reregister the chemical.

On the other hand, Chevron Chemical Co., the chief producer of Silvex, agreed to halt production, recall and dispose of the herbicide, and permanently cancel all of the registrations. In return, Chevron would be allowed to claim payment for all of the existing stocks of silvex.

In July, the U.S. Court of Claims ordered the Federal government to pay Chevron $12,880,842.98 for its stocks of silvex. The cost of the decision to suspend silvex will be nearly $19 million, not counting the time spent by hundreds of people involved in the many phases of the cancellation action.

USDA had back-up chemical for Medfly

If malathion had not been effective on the Mediterranean fruit fly (Medfly), the USDA had a back-up chemical.

On July 7, the Department had requested a Section 18 specific exemption for the use of acephate (Orthene) to eradicate the Medfly in California. This was just three days before the Governor of California agreed to the aerial use of malathion and one week before the spraying began. EPA did not publish this request in the Federal Register until August 24. When the comment period closed on September 8, USDA has already withdrawn the request. By that time the Federal authorities considered the prospects favorable for the successful eradication of the Medfly infestation.

As a result of experiments run to determine the efficacy of the organaphosphate insecticide, acephate on the Medfly, the USDA was aware that this chemical had two decided advantages over malathion. Acephate provided a better residual of effective bait and did not damage car finishes. However, the acute oral LD_{50} (rat) of 945 mg/kg for acephate compared to 1375 mg/kg for malathion. Acephate, Orthene®, is known more for its control of insect pests on ornamentals than for its agricultural uses. There are only 6 tolerances for the residue of acephate on raw agricultural commodities and a few more for meat, eggs, and milk products. When I last counted the malathion residue tolerances 3 years ago, there were 146 of them. I'm sure that the officials involved in Medfly programs decisions did not look forward to selling the safety of aerial spraying of acephate when the efficacy and safety data was not as well-documented as that of malathion.

1978 census puts $3.5 billion tag on nursery

The U.S. Census Bureau periodically surveys the agricultural sales in the country. In 1980, a very comprehensive survey was made as a part of the decennial census mandated by the Congress. The results of this survey are still unavailable, however, some figures from 1978 indicate that the nursery and greenhouse products business is a potent force in the market place—about $3.5 billion divided as follows: foliage and flowering plants, $815.0 million; other nursery and greenhouse products, $793.0 million; cut flowers and florist greens, $352.5 million; bedding plants, $289.0 million; sod, $174.2 million; and bulbs, $31.3 million. There were more than 33 thousand farms with ½ million square feet under glass or other protection and more than ⅓ of a million acres in production. We can be proud of our green industry.

Circle No. 125 on Reader Inquiry Card →

Turn to
turf protection
you can
believe in.

Improve your turf's health and beauty with the longer-lasting fungicide.

Because you take pride in the appearance of the turf under your management, it will be easy for you to become a ®BAYLETON BELIEVER.

New BAYLETON fungicide has been proven-in-use; it's highly recommended by university experts.

Unique two-way action both cures and prevents most fungus diseases—gives the turf care professional a valuable weapon to battle costly—and unsightly—fungus diseases.

Knocks out more diseases: BAYLETON offers the broadest disease spectrum control of any leading turf fungicide.

Eliminates resistance worries: BAYLETON is new . . . so there's no resistance buildup.

Cost-efficient: BAYLETON's long residual activity means fewer applications.

Faster-acting: Systemic control moves quickly and evenly

through turf grass for uniform disease control.

Now's the time to get after snow mold. And nothing controls it like BAYLETON . . . just as it also gives you fast-acting, long-lasting control of other tough diseases—dollar spot . . . brown patch . . . fusarium blight . . . red thread . . . striped smut and certain rusts.

It's easy to become a believer: Order 4 cases of BAYLETON fungicide. And we'll send you a smart-looking, limited-edition Grand Slam sweater by Munsingwear . . . no extra charge.

But your most valuable "premium" will be the way BAYLETON protects and preserves the health and beauty of your turf.

Turn to the next page for more information about getting your sweater with your fall order of BAYLETON fungicide.

Mobay Chemical Corporation
Agricultural Chemicals Division
Specialty Products Group
Box 4913, Kansas City, MO 64120

Don't trust your turf to anything less.

(Clip and mail to the address below)

...with your fall order of ®BAYLETON Fungicide.

Your fall BAYLETON order with your turf chemicals supplier for 4 or more cases will earn you this U.S.-made, Grand Slam sweater by Munsingwear. To qualify for your BAYLETON BELIEVER sweater, you must order by December 15, 1981. Your sweater will be sent following Mobay's receipt of verification of your BAYLETON delivery acceptance. Please allow three weeks for sweater delivery.

☐ ***Please send me the name of your Supplier for my area.***

Mail to: Mobay Chemical Corporation
Agricultural Chemicals Division
Specialty Products Group
Box 4913, Kansas City, Mo. 64120

Attn: BAYLETON BELIEVER Program

Name

Title Telephone

Course/Company

City/State/Zip

BAYLETON is a registered TM of the Parent Company of Farbenfabriken Bayer GmbH, Leverkusen.

News *from page 14*

More than 800 people attended the grand opening of the new corporate headquarters of Environmental Industries, Inc., in Calabasas, CA. The tri-level, $1 million structure sported lush green landscaping designed by Peridian Group, Landscape Architects. The building serves as a showpiece of the corporation's four subsidiaries: Environmental Care, Valley Crest Landscape, Valley Crest Tree Co., and Western Landscape Construction.

TREES

Red maples rated for wound recovery

The results of research performed by Sydnor and Gallagher at Ohio State University show Autumn Glory, Autumn Flame, Schlesinger, and Red Sunset as red maples with the fastest wound closure out of 12 cultivars. The research was conducted to obtain information on maintenance of trees as opposed to appearance.

The slowest cultivars for wound closure were October Glory and Gerling. Medium closure cultivars were Armstrong, Bowhall, Columnare, Scanlon, Doric, and Tilford.

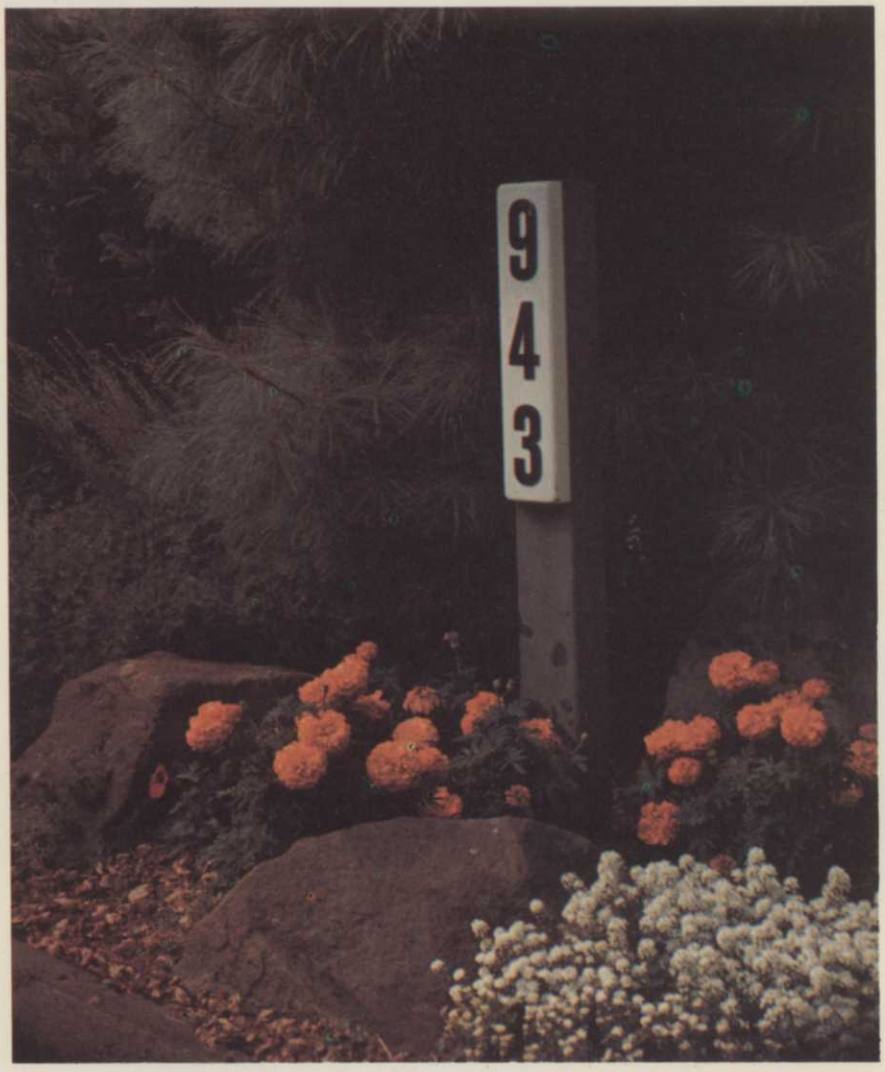
The F.E. Myers Co.'s national sweepstakes was won by Bob Hubbard (center), owner/general manager of the Oxford Hills Golf & Country Club, Oxford, MI. Myers dealer George Carson (left), W.F. Miller Co., Birmingham, MI, presented the specially prepared Myers Turf Sprayer, model VTL-10ESG. John Chiera, F.E. Myers sales manager, looks on.

Circle No. 130 on Reader Inquiry Card

LANDSCAPE PHOTOGRAPHY: SHOOTING TO WIN AWARDS

With the right camera, practical lens, tripod, and a few tips, you can back up your landscape award entries with near-professional photography.

by JAMES E. TRIGG



Rocks were dampened *to reduce glare and to let the plants dominate the photo.*

"You have to play to win" says the T.V. commercial for our State Lottery. Likewise you must submit an entry to the various Landscape Design Competitions such as those sponsored by NLA, ALCA, and IPA. I wonder how many contractors do not enter because they discovered that to hire a commercial photographer to take the required pictures costs $500 per day and up plus expenses. Fortunately with today's automatic cameras you can do a pretty good job yourself, and that's what this article is all about.

To do any job well you must have the proper tools. For landscape photography, I recommend a 35 mm single lens reflex (SLR) camera with automatic exposure controls, either aperature or shutter speed priority. That is, you set the lens opening (aperature) and the camera automatically sets the proper shutter speed. Other cameras require you to set the shutter speed and the camera sets the lens opening (shutter priority). Either is fine.

If you are going to buy a camera for your business (tax deductible), don't accept the lens that normally comes with it. Buy the body only or insist on full credit for omitting the lens. Now purchase a short zoom lens with macro capabilities. This will permit you to take medium wide angle shots of about 35 to 39 mm and short telephotos of about 85 to 100 mm. This one lens will also allow you to take closeups down to about one third life size.

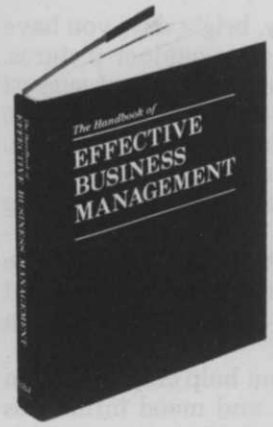
Now you can take pictures in narrow places which prevent you from backing up sufficiently to take your picture as well as distant and closeup pictures without changing lenses.

With this one lens you should handle at least 90% of all your photographic situations. Stick to the well known makes such as Canon, Pentax, Minolta, etc. However, the short zoom lens need not be of the same manufacturer as your camera. There are many fine independent lens makers on the market — your friendly camera

James E. Trigg is president of The Academy of Science and Art of Pittsburgh in Pennsylvania.

continues on page 26

During the next 12 months



will you...

- **Struggle to develop a realistic budget? If so, see page 88.**
- **Hire or fire an executive? Then see page 279.**
- **Attempt to boost productivity while lowering energy consumption? See page 343.**
- **Use breakeven analysis as a competitive weapon? See page 239.**
- **Seek professional advice from an accountant, lawyer, banker or outside consultant? See page 14.**
- **Weigh foreign exchange risks before conducting business abroad? See page 40.**
- **Find your company caught in a product liability crisis? See page 370.**
- **Research the goals and needs of your customers? See page 228.**
- **Initiate an effective production inspection system program? See page 339.**
- **Try to market yourself for a new job? See page 151.**
- **Be called upon to make a formal presentation? See page 95.**

A PRACTICAL ANSWER

The Handbook of Effective Business Management, a business reference book published by the editors of HBJ Newsletters, Inc., a subsidiary of Harcourt Brace Jovanovich, will provide you with concise business advice you need—when you need it. Keep it handy...in your office or personal library. And USE it! When wrestling with a sticky business problem... when taking on a new responsibility... when confronting a fresh business opportunity.

You will find authoritative and practical business advice...presented in straightforward nontechnical English. And everything is thoroughly organized and indexed so you won't end up wasting valuable minutes searching for the information you need.

Whether you're a small business owner, middle manager, or CEO, having *The Handbook of Effective Business Management* on your desk is like having a team of seasoned business experts at your side...offering you succinct, time-tested advice on topics *you* need to know about: budgeting, marketing, advertising, operations and cost control, personal management skills...and more!

BUILT TO LAST A CAREER

With its big 7½ x 9¼ inch page size, over 400 pages, durable cover, and heavy-duty binding, *The Handbook of Effective Business Management* is as substantial and impressive as it is practical. It has been designed for constant use because we know that once you discover what a useful and time-saving addition it is to *your* library, consulting it will become a business habit that will last a career.

OUR GUARANTEE

The Handbook of Effective Business Management is just $47.50, prepaid. And that's fully tax deductible if you use it for business purposes. Plus, you are protected by our money-back guarantee: Examine *The Handbook of Effective Business Management* for two weeks. If you're dissatisfied with it for any reason, simply return it and we'll send you a prompt and full refund.

YES! Please send me _____ copies of
The Handbook of Effective Business Management

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

☐ Check enclosed payable to HBJ Newsletters, Inc.

☐ Charge my ☐ American Express ☐ Master Card ☐ Bank Americard / VISA

Account # _____ Expiration date _____

Signature _____

Please mail to: HBJ Newsletters, Inc., P.O. Box 6181, Duluth, MN 55806. WTT/1181

***Before picture** doesn't have to be a work of art, but it should pinpoint flaws in the landscape, such as the distracting contrast between the brick wall and the plant material and the condition of the plants.*

shop dealer will advise you a lot better than those discount merchandise marts.

Buy a sturdy tripod — not one of those light duty jobs. You may wonder, why a tripod? After all there are fast films available. This is true, but the best quality of pictures is produced by fine grain films which are slow with ASA ratings of 25 to 64 such as Agfachrome and Kodachrome. Also if you want everything in your picture to be sharp, you will stop down your lens to f-11 or f-16. This will result in shutter speed of 1/60th of a second or longer, depending on the ambient light. If you were to hand hold your camera your photographic image will suffer due to camera shake (however slight), and after all, we're trying to show the world our prize landscape job in all its glory with the sharpest possible picture. Furthermore, any macro (closeup) shots you take absolutely require a steady platform as only a good tripod can provide. While we are on the subject of tripods, did you know that using a tripod forces you to slow down and compose a picture more pictorially instead of taking indiscriminate "grab shots" when your camera is hand held.

As you carefully compose and take your pictures, why not take two or more identical exposures so that you will have duplicates to show prospective clients and also to submit to other contests.

I have already mentioned several color slide films. Some competitions require between 6 and 20 color slides per entry. Remember to use outdoor film for your outdoor photography and indoor film for any indoor pictures. Because the color of the available outdoor light is different than that indoors, you must match your color film to the available light. For example, if you use outdoor film indoors your pictures will have an unreal overall reddish cast. If you are taking indoor pictures under fluorescent lighting, you have a very difficult lighting problem which you should avoid if possible. Because there are so many different types of fluorescent lamps, even professional photographers find it difficult to take a satisfactory picture with color film.

Some competitions require at least one 8″×10″ black and white photograph. Fortunately, any type of lighting will suffice. Just choose a medium speed film of about 125 ASA for outdoor use and 400 ASA for indoor use.

Other competitions require 8″ × 10″ color prints. These require color print film such as Kodacolor II or Kodacolor 400. Use the Kodacolor II outdoors with ASA 100. For indoor use with tungsten lighting use Kodacolor 400 with an 80A filter (see your dealer), and then you must derate it to 100 ASA.

Photography tips

A camera is just a tool. A "better" camera does not take "better" pictures any more than an electric typewriter will write a better short story or a best selling novel than a manual typewriter.

For cloudy, bright days you have ideal lighting for outdoor pictures. If the sun is very bright, I suggest that you take your pictures in the early morning or late afternoon. The sun being low will cast interesting shadows which will bring out textures. This is especially important in Arizona, New Mexico and other areas where pebbles and stones are used extensively in landscaping.

Lighting can help create mood in your picture and mood influences people (judges). You can create this mood only when the sun is low and near the horizon. Your pictures can take on an etheral quality which gives your pictures the added dimension of mystery, somberness, or even gaiety. In some situations it pays to study the effect of the rising or setting sun on your subject, that is, if you have the patience and time to wait.

There are many books available on photographic composition. They all give certain design "rules" which can serve as guidelines for picture taking. The most frequently quoted rule is to keep your composition simple and uncluttered. Do not include much of the sky, as its brightness can detract and pull the viewer's eye away from your center of interest.

Avoid having any horizontal lines cut your picture in half or place a figure dead center. Your figures should be located about one third of the way in from any corner of your picture and should not dominate it. The person should be involved in something — anything that is believable. This not only lends credibility to your picture but also scale.

Your landscape should be tidy with no scraps of paper, cans, toys, etc. visible, although a lived in appearance can give credibility.

Try to shoot your picture from an angle and, where possible, frame your landscaping by a tree trunk and overhanging branch.

To enhance the color in your color slide pictures, I recommend the use of the 1-A filter used together with a polarizing filter. Remember that a polarizer only works when you are shooting at right angles to the sun. It will not have any effect if the sun is either directly in

Continues on page 28

This is quality Sulphur Coated Urea from C·I·L. It is the prime ingredient in outstanding blended fertilizers from major manufacturers from coast-to-coast.

You can recognize it
by how it looks
and how it grows grass.

Try it and let your grass be the judge.

Quality S.C.U. (32-0-0) from C·I·L
is a proven source of
controlled release nitrogen formulated
to feed turf the way it should
be fed . . . daily.

For Information, Sales and Service
Contact: P. Buckley
C·I·L Inc., P.O. Box 5201
London, Ontario
N6A 4L6
Telephone 519-672-9220

C·I·L **Professional Turf Products**

Circle No. 107 on Reader Inquiry Card

front or behind you. The polarizer can remove the shine from a lawn and give you a deeper green. However, you can go too far and end up with a dead effect. In any case you can study your view through your camera's viewfinder as you rotate the filter.

Of the 10 to 20 slides which you make, two or three should be of the whole project and the rest used to illustrate construction and planting details. This is where the short macro zoom lens allows you to do the job without requiring another lens in most cases.

Sometimes a driveway will appear so bright in a picture as to distract the viewer's eye away from the planting. All that you have to do is hose down the driveway and walkway and your picture will improve. This is also true of closeups of rock garden plantings. A wet rock looks darker in a picture and allows the plant colors to dominate.

It takes imagination to see in an artistic way. In fact imagination and creativity should be involved every time you press the shutter button. But we are not all blessed with these qualities. So we look for contrasting elements in our pictures such as large and small, bright and subtle color, near and far, old and new, etc. You could dramatize your pictures through your choice of tricky camera angles, extreme wide angle lenses, etc. Distortion created this way may be pictorially exciting to some viewers, but the judges will find them awkward, distracting and misleading in your presentation. Your photographic technique must not call attention to itself.

Finally, you must follow all of the contest rules exactly. Secure your mailed entry with stiff cardboard. Your color slides should be identified with your name and address, numbered in the sequence that you want the judges to view them and "spot" them. Spotting means that as you hold up a slide and view it normally, place a large dot with a felt pen at the lower left hand corner of the cardboard mount. This is a universally accepted standard which tells the projectionist how your slide is to be projected.

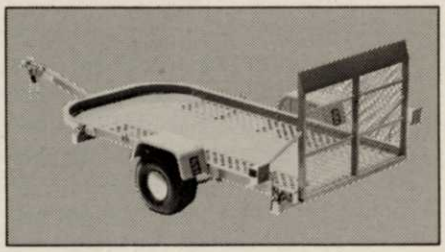
Remember to take your time in taking your pictures. Study your project through the viewfinder carefully because with a SLR camera, what you see is what you get. Always use a tripod for sharp pictures and focus carefully. The lighting can make or break your picture. Use the early morning or late afternoon light.

Possibly, the only exception to the aforementioned rules is the "before" picture. It could be black and white, and it need not be an example of your very best photographic effort. The contrast between the "before" and "after" pictures would be enhanced. Also remember that you have to enter a competition if you are to win. **WTT**

Special thanks to Don Horowitz of Plantscape, Inc., of Pittsburgh, Pennsylvania for his assistance with this article.

Bigger Specs for Bigger jobs.

Introducing the 4200 lb. capacity Trailer from Snowco.



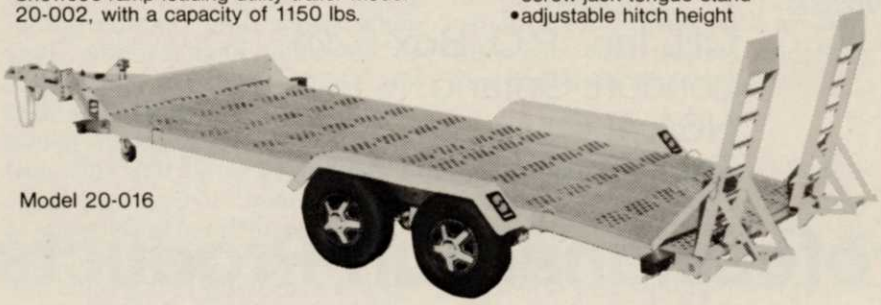
Snowco offers a broad selection of ramp, tilt and box trailers, with capacitities from 1000 lbs. to 4200 lbs. Shown here, Snowco's ramp loading utility trailer Model 20-002, with a capacity of 1150 lbs.

Snowco built their reputation on sturdy dependable trailers. Their big new 4200 lb. capacity utility trailer has the same top-quality construction that makes every Snowco trailer rugged and practical. This newest trailer is ideal for hauling grounds maintenance equipment, construction equipment, ditchers, and other bulky, hard-to-handle loads.

Standard equipment includes:
- heavy-duty steel deck
- adjustable loading ramps
- hydraulic brakes
- mag wheel covers
- screw-jack tongue stand
- adjustable hitch height

Snowco's lo-ride suspension system makes loading easy **and** lowers the center of gravity for maximum stability and safety at legal highway speeds. What's more, the big new 4200 lb. capacity trailer is backed by the reliable Snowco Warranty.

No matter what your hauling needs, Snowco's new top-of-the-line trailer can handle it...at a big 4200 lbs.



Model 20-016

Snowco
Division of Beatrice Foods Co.
4386 McKinley, Omaha, NE 68112

Please send more information on your complete utility trailer line.

Name _____

Organization _____

Address _____

Phone _____

City _____ State _____ Zip _____

© 1981 Snowco

Circle No. 136 on Reader Inquiry Card

The pros chose SHADOW

"As professional lawn care specialists, we want our customers' lawns to advertise for us. One of the major problems we find in many of our customers' lawns is stressed areas under and around shade trees. We formulated our Prograss lawn overseeding mix to remedy these difficulties. For our shade mix we chose 90 percent Shadow Chewings Fescue and 10 percent A-34 bluegrass. We see exceptional results when proper overseeding procedures are followed. Shadow makes *us* look good, too."

Mike Erb
Prograss Lawn Service
Field Representative and licensed applicator.

Shadow is a new variety of Chewings type fine fescue developed for improved shade tolerance and resistance to powdery mildew. Breeding for these attributes was a long and tedious job, but the results were better, stronger turf than the old line fescues. Insist on the seed the pros choose for your shade mix.

"The hottest shade tolerant

SHADOW

fine fescue under the sun"

Marketed by

TURF-SEED
Turf-Seed, Inc.

P.O. Box 250, Hubbard, OR 97032
503/981-9571 TWX **510-590-0957**

The **R**esearch, **P**roduction, **M**arketing **C**ompany

Circle No. 141 on Reader Inquiry Card

PROFILES: AWARD WINNING COMMERCIAL LANDSCAPES

by BRUCE F. SHANK, executive editor

Federal National Mortgage Association *retains the formality and grandeur of earlier times in a modern environment.*

Hix Green Buick *was the ultimate challenge of naturalizing parking areas, acres of steel, and separate sales and service facilities.*

Prior to high interest rates, landscape architects and contractors had a difficult time convincing businesses to invest sufficiently in professional landscaping. Obviously, it is tougher now. Nevertheless, a few good salesmen with creative designs were able to preserve award winning landscapes for commercial sites in the past year.

The American Association of Nurserymen and the Associated Landscape Contractors of America recognized these determined landscape businessmen in 1981. We present a few of the winners to show that the art persists despite the economy.

These winners got a special prize in addition to their association awards. Most of them also received a handshake from First Lady Nancy Reagan and presidential advisor Ed Meese in Washington, D.C. in September. If you share the Reagan platform that business must be healthy to have a healthy nation, and if you associate the importance of a beautiful landscape at the White House with the image of American business, then you must also support commercial landscaping across the United States. The excuse "we can't afford plants to make our office pretty" is pure shortsightedness. Image carries a company farther than the few thousand dollars more on the bottom line because the janitor stuck in a few maples and planted annual ryegrass or redtop around a commercial building. Commercial landscaping has not been credited with any particular percentage in property value like residential landscaping has, but the value is definitely there.

We invite you to read the following job descriptions and challenges. I guarantee you and any of your customers the companies that paid for the following projects are very pleased with their investment. And the contractors and architects have a little better feeling of citizenship after being a White House guest.

Federal National Mortgage

The new Federal National Mortgage Association headquar-

Continues on page 35

Circle No. 133 on Reader Inquiry Card

How do you make a great crabgrass herbicide even better for turf?

You cut the price.

About the only thing that could make Chipco® Ronstar® G herbicide better for turf would be to lower the cost. So that's what we've done. Now you can get the superior performance of Ronstar G at a

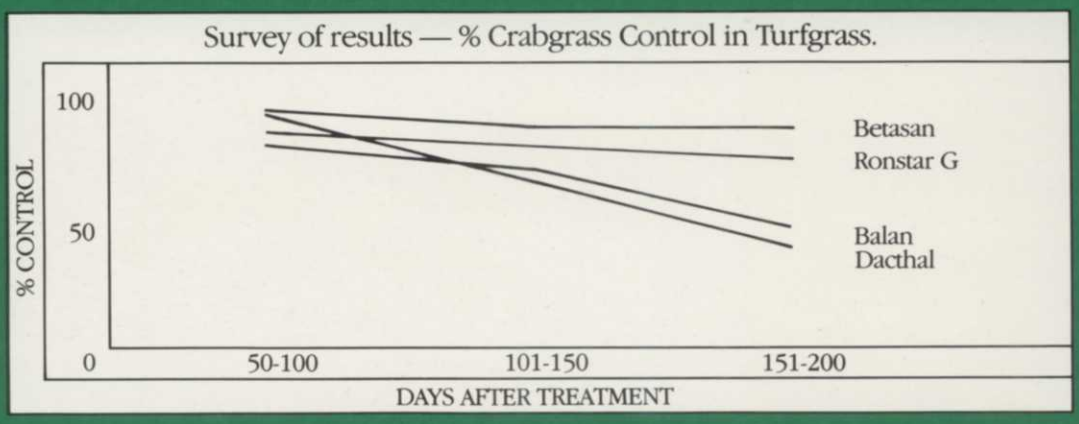
dramatically reduced price.

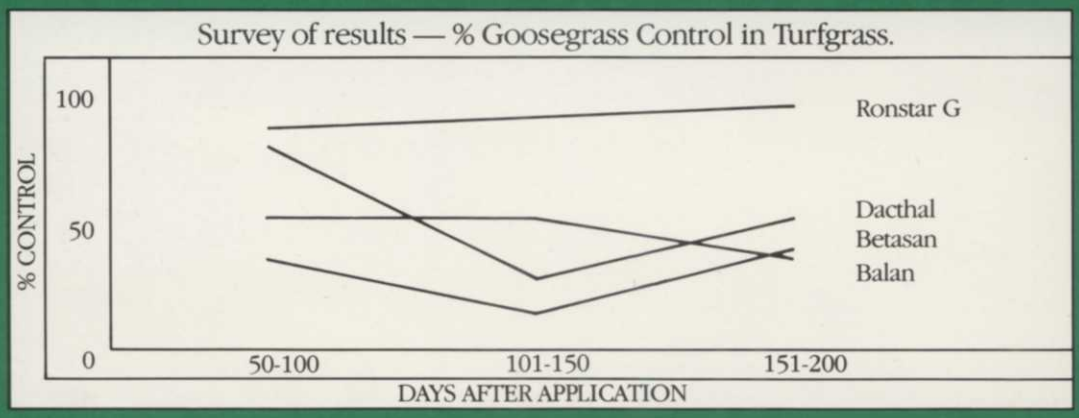
Nothing controls crabgrass and goosegrass better than Ronstar G. And you get this great weed control for the whole season with just one easy, early application.

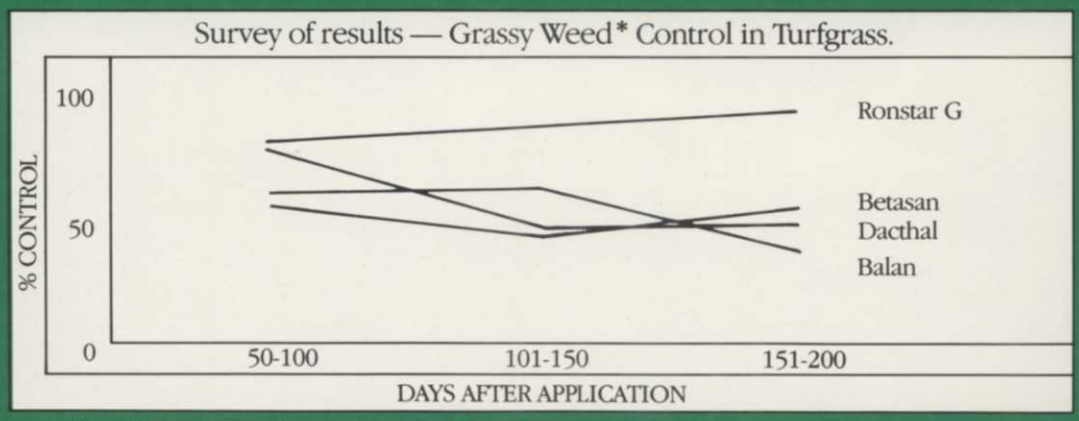
Treat your turf with Ronstar G. The great crabgrass herbicide with the better-than-ever price. Rhône-Poulenc Chemical Co. Agrochemical Div., Rhône-Poulenc, Inc. Monmouth Junction, NJ 08852.

Chipco® Ronstar® G HERBICIDE gives superior control.

As you can see in the following charts, Ronstar G gives effective control of grassy weeds all season long.







In field trials conducted from 1973 to 1977

*Crabgrass and Goosegrass.

With control like this, you can go for a whole season with no complaints, no call-backs.

Balan is a registered trademark of Elanco Products Company
Dacthal is a registered trademark of Diamond Shamrock
Betasan is a registered trademark of Stauffer Chemical Co.

ters in Washington, D.C., is a combination of old and new. The architectural concept was to complement the original design by utilizing the same materials, i.e. handmade brick, slate roof, plant varieties, but to lessen the ornate formality by simplifying the new building and planting design.

Existing specimen plant material had to be moved as contractors required specific areas of the site for their work. In many cases, both with transplanted and new plant material, supplementary drainage was installed because of the density of clay soil on the site.

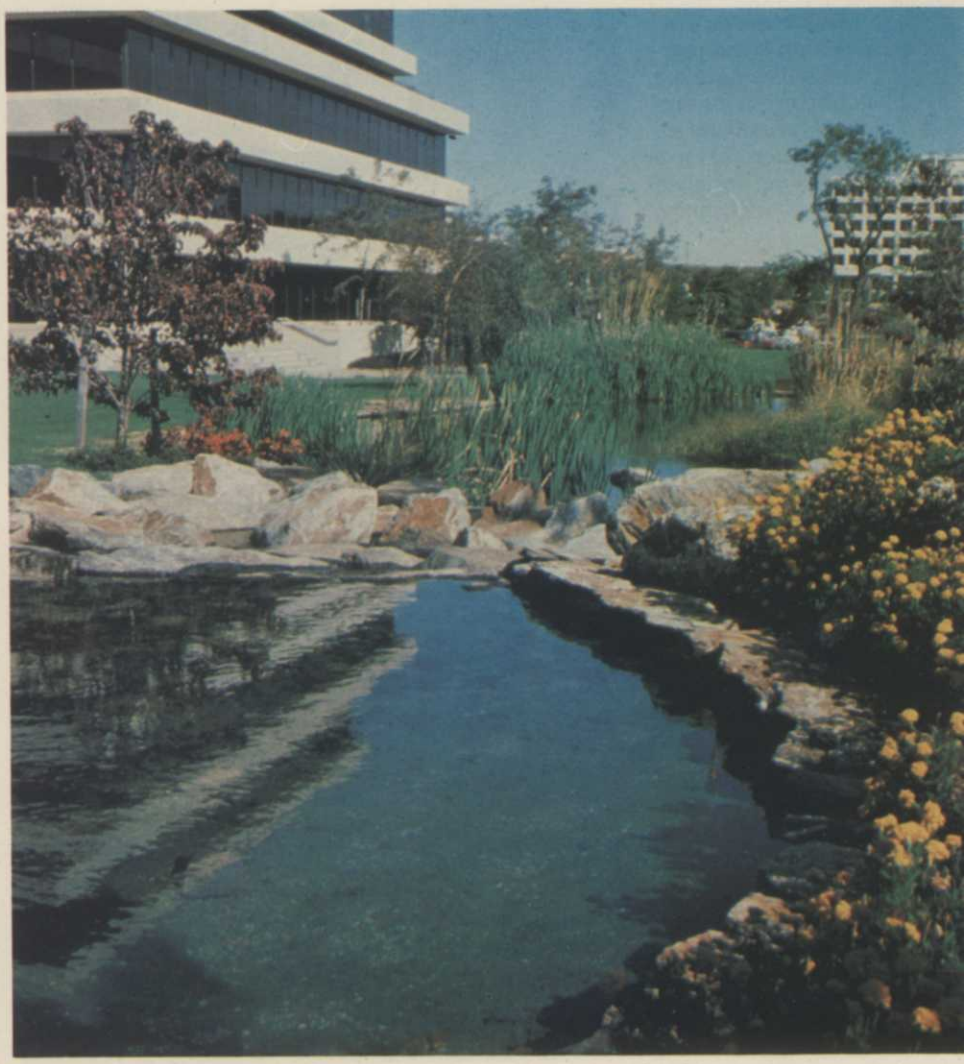
The gardens are located one story below grade in the interior of the complex where existing and new buildings join. Because these gardens are completely enclosed by building walls and inaccessible by crane, the only option was to bring the soil and plant materials through the ground level of the addition.

The area between the addition and the multi-level parking garage is a series of terraced gardens. The brickwork is intricate and similar in style to that used in colonial Williamsburg with its curved and graceful design. The difficulty in working in areas such as this is potential damage to the brickwork.

The exterior of the site was graded and sodded to provide the required effect of full, green carpet. The planting in the front of the building retains the formal effect of the existing planting but as one walks to the sides and to the back of the complex, the planting becomes much more natural and blends gracefully into the wooded areas.

Although the site retains its formality and grandeur, there is the simple, attractive quality of a forest glade.

The contractor was Chapel Valley Landscape Co., Woodbine, MD. The landscape architect was EDAW, Alexandria, VA.



Marriott Corporation Headquarters *tied a modern office building to an existing park-like business complex.*

Hix Green Buick

The site of the Hix Green Buick Co. in Atlanta, GA, had no existing trees and was very flat and monotonous. The dealership was designed into three separate buildings. Planting islands were created to break the expanse of asphalt and parked cars. Architectural mounds were constructed and planted with large trees and shrubs to soften these areas.

Outside the sales showroom topsoil was brought in to construct a mound. Plantings of large River Birch, dwarf Burfordi Holly, Pampas Grass and hybrid Daylilies were used for an interesting color and texture combination. Low shrubs are used to maintain the scale and balance of the one-story building. Masses of variegated Liriope were planted to incorporate color into the landscape.

Small garden areas were designed that could be viewed through the windows of the adjacent sales office. Featured are a dwarf Japanese Maple, weeping Yaupon Holly, and various other plants which provide color contrast year round. Another garden which can also be viewed from the showroom has a variety of textures and colors featuring Crepe Myrtle, variegated Aucuba and Mahonia Bealei.

Mounding was effectively used to soften the expanse of parking areas in front of the service building. Large Cedrus Deodara, Crepe Myrtle, Weeping Willow and River Birch were planted on these berms. Small mounded areas were constructed and planted with Blue Rug Juniper, dwarf Yaupon Holly and hybrid Daylilies to help soften the harsh walk leading to the service building.

The used car building was landscaped with large Cedrus Deodara. Magnolia provided excellent evergreen screening and had to be installed by a large crane.

The plants were selected espe-

Continues on page 36

The Memorex Corporation Headquarters *utilized sunken nature areas for employees to get together next to a building designed for efficiency.*

Nationwide Plaza *met the desire of a national company of rural origin to make an urban setting informal and restful.*

The Stanford Shopping Center *project gave a 25-year-old shopping center new life and attraction to California shoppers.*

cially for their tonal values, creating a color variation necessary for year-round interest.

The landscape contractor and architect was Green Brothers Landscape Co., Smyrna, Georgia.

Marriott Corporation

The new Marriott Corp. headquarters and parking area was designed to be integrated into an existing park-like business complex in Bethesda, MD. The effective use of planting in bermed parking medians; along streets and pedestrian walkways; at entrances and around the building; in the garden and pond area; and on the 4th and 6th floor terraces achieved this integration.

The landscaping included not only an enormous quantity of plantings but also specialized contouring and placement of plant material in the garden area; planting, including crownvetch, on steeply bermed slopes that screen the parking from Interstate 270; and sodding and seeding.

The planting of the 4th and 6th floor terraces was the most challenging part of the project. These two floors jut out from the rest of the building. The plans called for the planting of 7,083 Cotoneasters in planters to create a hanging garden effect. The first problem was locating that number of cotoneasters. The 760 planters had to be lifted by crane into place. A specially designed, crane-mounted, self dumping hopper was used to lift the gravel, pre-mixed planting soil and mulch for the planters.

The landscaping blended the building into the park-like surroundings without sacrificing its architectural uniqueness.

The contractor was Chapel Valley Landscape Co., Woodbine, MD, and the landscape architect was Meade Palmer, Warrenton, VA.

Memorex Corporation

The Memorex Corp. headquarters is one of the many major industrial/research facilities in Santa Clara County, CA. Major objectives of the landscape project were to create an environment impressive as a corporate symbol, and to create a working environment,

Continues on page 40

KERB® ENDS YOUR ANNUAL BLUEGRASS BLUES.

Annual bluegrass, alias *Poa annua,* is one tough, ugly problem. It will do a number on your fairways. But not if you apply Kerb preemergence herbicide this fall. Kerb prevents this seedy character from rearing its ugly head.

Kerb wipes out germinating Poa *before* it reaches the surface.

With Kerb your fairways stay green. Poa can't mature so there are no seeds tracked onto greens. And you can take out cool-season overseeding grasses like rye without harming dormant Bermudagrass.

Call your local supplier today and order Kerb 50-W herbicide. You'll never have the bluegrass blues again.

Circle No. 134 on Reader Inquiry Card

Use Kerb in the fall~ Poa won't sprout at all.

ROHM AND HAAS
PHILADELPHIA, PA. 19105

Read the label and use only as directed.

Buy a mowing tractor and get a compact utility tractor in the bargain.

There's hardly a mowing job you can think of that a John Deere 650 or 750 can't stand up to.

There's also hardly any other job you can think of that one of them will back away from.

So they can promise you maximum productivity and flexibility. And deliver it for years to come.

Because, besides a choice of three mowers—center or hitchmounted for grooming, and rotary for rougher cutting—you get an almost endless choice of capacity-matched attachments: front loaders, tiller, disk, box scrapers, front and rear blades, even a posthole digger and a post driver.

Now, having that kind of choice is important. And so is knowing that all these are designed to attach quickly, without ever having to fabricate a fit or hope that someone else's attachment will work.

But most important of all are the tractors all those attachments attach to: John Deere 650 and 750 Task-Master™ Diesel Tractors.

They're high-clearance 14.5- and 18-PTO-hp tractors powered by fuel-stingy, long-lived diesel engines. On either model, standard features include 8 forward and 2 reverse speeds, 540-rpm rear power takeoff, differential lock, and a Category 1 3-point hitch. Plus options that include mechanical front-wheel drive, and traction-tread or high-flotation tires.

All features you expect to find only on much larger tractors.

And maybe best of all, they're priced right. Plus your John Deere dealer has a service and parts organization that understands what downtime can do to an owner who depends on his tractor for a living.

The John Deere 650 and 750 Compact Utility Tractors.

The tractors that give you big mowing capacity in a small size. And then go on to give you more.

Nothing Runs Like a Deere®

For nearest dealer or for free folder, call 800-447-9126 toll free (Illinois 800-322-6796) or write John Deere, Dept. 67, Moline, IL 61265.

Circle No. 109 on Reader Inquiry Card

*Maximum PTO hp measured at 2600 engine rpm for the 650, 2400 engine rpm for the 750, factory observed.

focused upon landscape spaces, conducive to communications, relaxation and efficiency. It was considered vital that the buildings and landscape be designed in concert.

The first goal was to set the crisp, international-style building into a contrasting, free form landscape. This was accomplished by large earth forms at the base of the building. Trees were massed in irregular groupings rather than in formal arrangements. Dark conifers provided contrast with the white facade of the building and Birch repeated the white vertical elements of the arcades around the courtyard. The landscape forms were further emphasized by shaping the parking areas into small bays to control and reduce the visual impact.

The second goal was to give visual prominence to the Employee Center, entrance fountain, and plant materials. The courtyard was placed four feet below the arcaded walkways with surrounding mounds rising three feet above the walkway. The fountain and courtyard were surrounded by Rhododendron, Pieris and Camellia which provide colorful contrast to the white building when in bloom.

Employee terraces were set into the earth, repeating the bowl effect of the entrance courtyard. Large stones, irregular pavements, broad steps, and angular concrete seatwells were used to emphasize intimacy of scale and closeness to landscape. Seasonal flowers add color to the spaces.

Plant materials were selected to match the constraints of soil quality and prevailing afternoon winds. Trees and shrubs on the perimeter of the site were selected for drought tolerance and for natural forms which would develop into a "fuzzy" enframement of the complex. The landscape adjacent to the buildings is neat with turfgrass dominating. Shrubs, primarily *Cotoneaster dammeri, Coprosma kirkii,* and *Raphiolepis sp.* were placed to give form to steep slopes, to emphasize heights of earth forms, and to provide seasonal variety in flower and color.

The contractor was the late Rudolf Watson of Watson and Associates, and the landscape architect was Royston, Hanamoto, Beck & Abey of Mill Valley, CA.

Nationwide Plaza

It was the expressed desire of Nationwide Insurance that their new home office plaza in Columbus, OH, be informal in character and reminiscent of the company's rural origin. The 1½-acre plaza was to include a meandering water course and pools, lawn areas for lounging, and ample opportunity for sitting.

The design for the Plaza is a hillside with a spring and resultant stream with waterfalls and pools. Wooded knolls and open glades are blended with functional walkways and plaza spaces.

Access ways are provided along the Tower and Pavilion while low walls separate the planted area from the spray of road salts along major roads. Terrace walls were designed for sitting, relieved at points with overhanging plant material. Inside this plaza frame, the composition is more rustic. Walls take on the character of exposed ledge and are constructed of natural split-faced granite. Near the top of the Plaza, a spring flows over the granite ledge into a pool. A stream leads from the pool and spills over a second outcrop of granite and into a large pool at the base of the hill adjacent to the main entrance.

While the urban environment places limitations on the choice of plant material, the composition of plantings is intended to be natural. Evergreen knolls frame the plaza on each side. A grove of birches punctuate the inside corner of the plaza, while a variety of shade trees and flowering trees surround the central lawn area. Along the water course, weeping shrubs and vines soften the rock edges. A variety of plants, including perennials, emphasize the stream course and weeping cherry trees overhang the waterfall at the base of the hill.

The landscape contractor was Site Improvement Co., Canal Winchester, OH. The landscape architect was Saski Associates, Inc., Watertown, MA.

Stanford Shopping Center

Mounting competition from regional shopping centers motivated Stanford University to revitalize its 25-year-old shopping center in California.

The basic revitalization plan was to create a sequence of spaces. Free-standing, semi-enclosed arched porticos served as the main design device. The arch was both the architectural and landscape design symbol throughout the project.

Circular planters and circular brick paving patterns were introduced in close architectural relationship to the pipe columns which connected paving patterns with vertical architectural expression.

Visitors ramble in and out of covered glass arcades along varying widths of the mall, around rusticated modern columns, landscaping, fountains, hanging baskets, flowering pots, vine-colored trellises, sitting areas, and through large columns of pavilion display spaces. A vibrant environment was created from existing trees which were the foundation for the mall planter locations.

The landscape contractor was A & J Shooter, Inc., Mountain View, CA. The landscape architect was Fong & LaRocca Associates, San Francisco, CA.

Summary

The move away from formal garden areas to natural overall settings is complete. Cold open parking lots and noisy concrete walkways are giving way to rolling landscapes and greenery both outside and inside. The use of low-maintenance, local plant material is also firmly established for exterior landscapes. The growing awareness of energy conservation will push the inclusion of screening and insulating plant material.

Customers have a choice for shopping areas and will pick the better landscaped, more comfortable setting. Employees too are being considered more in corporate design plans as open landscape plans necessitate use of interior plants and remote settings outdoors for privacy.

The interior landscape has arrived and strengthened the investment in exterior landscaping. In December, award-winning interior landscapes will be featured. **WTT**

You just can't buy a better mowing tractor.

It's been proven time and again, day after day, acre after acre. You just can't buy a better cutting mowing tractor. For a very convincing demonstration, call your Jacobsen Distributor.

JACOBSEN
TEXTRON

Jacobsen Division of Textron Inc.

Jacobsen: You just can't buy any better.

Circle No. 119 on Reader Inquiry Card

GOLF CAR SALES SHOULD IMPROVE AS FLEETS FAIL

by THOMAS PACIELLO, equipment editor

Golf car sales should increase in 1982, despite the problems of rising production costs and high interest rates, according to many golf car manufacturers.

One of the main reasons for the positive sales outlook is the effect of reconditioned cars on the market. "Many golf courses are reconditioning their golf cars to get one or two more years out of them," said Tom Duffy, Harley-Davidson Milwaukee, WI. "In 1982, many of these reconditioned fleets will need to be replaced." All of the manufacturers contacted by *Weeds Trees & Turf* echoed Duffy's comments, noting that many golf courses have pushed their fleet turnover from 3-4 years back to 4-5 years. When the interest rate boom occurred last year many courses postponed their golf fleet purchases. Manufacturers are predicting that 1982 will be the year that many old golf car fleets are replaced.

In addition to reconditioning cars, golf courses have resorted to other methods to beat the high cost of borrowing money while replacing their golf car fleet. Manufacturers noted an increase in the number of leasing and lease/purchase agreements. Creative financing is also on the rise but usually between the golf course and the dealer, not the manufacturer.

While high interest rates have affected golf course purchases, it has also made the marketplace more competitive. Manufacturers told *WTT* that the high cost of money, materials and labor have made it very difficult to compete simply on price. "When production costs go up so does the selling price," said Wayne Wilson, Davis 500, Inc., Greenville, SC. "Manufacturers are just trying to hold down costs as much as possible." Golf car prices for 1982 rose from as little as $63 to as much as $1085, according to comparisons between the 1981 and 1982 Golf Car Guide. "Competition in the golf car market makes sales more difficult and it affects the car's pricing and features," said Duffy. "Two of the features that we are stressing is that our cars are quieter and more economical." Most golf car firms noted that efficiency was one of their biggest selling points.

While some manufacturers will rely on business from new golf courses, many agree that the lion's share of the business is in retaining existing accounts and converting others. In updating the Golf Car Guide for this year, *WTT* noticed that three companies changed ownership and two dropped out of the business altogether. With a limited amount of existing and conversion business available, if the predicted sales increase does not develop, check this guide next year for a current list of golf car manufacturers.

Possibly taking a lead from automobile manufacturers, most golf car companies have expanded the list of options that can be added to their 1982 models. Not every company could lay claim to a model that sports a radio, clock, cigarette lighter, refrigerator, television, sunroof, musical horn, whitewall tires, side and rear curtains, etc. (such as Elmco's Royal Ride 21E); however, even the moderately priced models are becoming more ambitious in how much optional equipment they make available.

While the average golf course turns over its fleet every 4-5 years, golf car manufacturers told *WTT* that the average life of their cars is approximately 8 years. Some manufacturers noted that one of the reasons for this difference is proper maintenance. Every manufacturer responding to *WTT*'s golf car survey stated that proper maintenance was the key to longer vehicle life. Estimated maintenance costs ranged from $30 to $200 per year.

continues on page 44

INTRODUCING

GAS·STRETCHER·R·R·R

The new WhisperGlide™. Delivers up to 35% better fuel economy.

In our tank-to-tank, on-course testing, WhisperGlide kept passing the pump for an equivalent of 30, eighteen-hole rounds...up to 35% better fuel economy than the competition.

This superb fuel economy results from a new WhisperGlide engine that's able to achieve full vehicle speed at only 2800 rpm. And, an exclusive new transmission with overdrive, a new carburetor, newly designed cylinder porting and a modified exhaust system.

Never before has there been a golf car that offers so much and asks so little. Dependability, reliability, simplified servicing, the quietest operation for the rider on the market and unparalleled fuel economy. Backed by our 2-year parts warranty on key engine components.

See your Harley-Davidson Dealer for a demonstration.

Ask about our complete line of gas and electric cars and genuine Harley-Davidson replacement parts.

For more information write or call: Harley-Davidson Motor Co., Inc. 3700 W. Juneau Ave., P.O. Box 653 Milwaukee, WI 53201 414-342-4680.

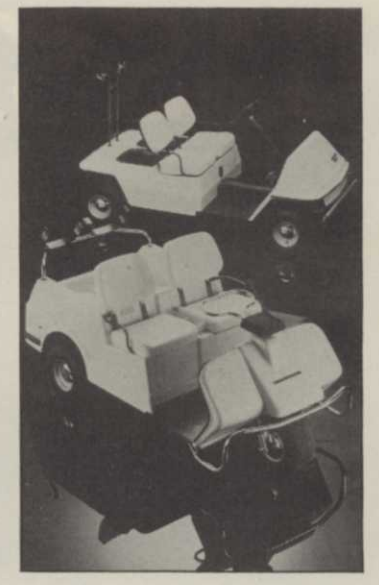
MOTOR HARLEY-DAVIDSON COMPANY®

Golf Car Division

© 1981 Harley-Davidson Golf Car Division 1304

Circle No. 115 on Reader Inquiry Card

Golf carts *from page 42*



1982 GOLF CAR GUIDE

GOLF CARS	Model	Price	Fuel Mode	Wheels	Steering	Turning Radius (in.)	Weight (lb.)	Load Capacity (lb.)	Frame Mat.	Body Mat.	Warranty (yr.)	Mileage	Lifespan (yr.)	Service Contract	Maintained by	Forward sp.	Reverse sp.	Fuel cap.
Club Car Augusta, GA 404/863-3000	DS	3053	E	4	SW	276	815	750	Al	Fg	2 Pt. 1 L	—	8-10	Yes	P	14	7	
Legend Golf Cars	EV3	2795	E	3	SW	240	894	750	St	Ur	1	—	—	No	P	12	12	
Eagle Vehicles Dallas, TX 214/388-7431	EV4	2925	E	4	SW	300	935	750	St	Ur	1	—	—	No	P	12	12	
Electric Carrier Corp. San Antonio, TX 512/826-8694	Caddy	2795	E	4	SW	168	950	800	St	St	1	10 hrs.	5+	Yes	P	12	12	
Elmco Cooksville, IL 309/725-3533	11E	5000	E	4	SW	222	855	850	Al	Fg	1	18 mi.	10	No	P	14	7	
	L21E	6000	E	4	SW	247	975	800	Al	Fg	1	18 mi.	10	No	P	14	7	
E-Z Go/Textron Augusta, GA 800/241-5855	X440	3090	E	3	SW	210	—	550	St	St	1	—	—	Yes	P	4	4	
	X444	3220	E	4	SW	246	—	550	St	St	1	—	—	Yes	P	4	4	
	GX440	3220	G	3	SW	210	—	550	St	St	1	★[3]	—	Yes	P	4	4	
	GX444	3260	G	4	SW	246	—	550	St	St	1	★[3]	—	Yes	P	4	4	
Harley-Davidson Milwaukee, WI 414/342-4680	MGIII	3125	E	3	SW	108	532[1]	750	St	Fg	—	1.5 hrs.	8	Yes	—	10	10	
	MGIV	3310	E	4	T	128 T 122	569[1]	750	St	Fg	—	1.5 hrs.	8	Yes	—	11	10	
	WGIII	2960	G	3	SW	108	598[2]	750	St	Fg	—	25mpg	6	Yes	—	12	12	8.5
	WGIV	3125	G	4	T SW	128 122	716[2]	750	St	Fg	—	25mpg	6	Yes	—	12	12	8.5
Melex, USA Raleigh, NC 919/828-7645	112	2950	E	3	SW	99	670[1]	—	St	St	1	—	—	No	P	12	12	
	212	3060	E	4	SW	111	715[1]	—	St	St	1	—	—	No	P	12	12	
Taylor-Dunn Mfg. Anaheim, CA 714/956-4040	Teebird	3540	E	4	SW	124	1132	1050	St	St	1	8 hr.	7	Yes	P	11	11	
Yamaha Motor Corp., USA, Cypress, CA 714/761-7300	E3	—	E	4	SW	114	595[1]	—	St	Ur	1	—	10	Yes	D	12	12	
	A3	—	G	4	SW	114	684[1]	—	St	Ur	1	—	10	Yes	D	12	12	
TURF VEHICLES																		
Blasius Electric Truck Anaheim, CA 714/828-7155	164	4950	G	4	SW	—	1240	3000	St	St	1	—	—	No	—	13	10	4

	Model	Price	Fuel Mode	Wheels	Steering	Turning Radius (in.)	Weight (lb.)	Load Capacity (lb.)	Frame Mat.	Body Mat.	Warranty (yr.)	Mileage	Lifespan (yr.)	Service Contract	Maintained by	Forward sp.	Reverse sp.	Fuel cap.
Cushman/ OMC Lincoln Lincoln, NB 404/475-9581	532	–	G	4	SW	120	1110	1500	St	St	90day	30mpg	8	No	P/D	23	4	7
	530	–	G	3	SW	78	975	1500	St	St	90day	30mpg	8	No	P/D	23	4	6
	531	–	G	3	HB	90	990	1000	St	St	90day	30mpg	8	No	P/D	18	4	6
	549	–	G	3	HB	45	535	250	St	St	90day	30mpg	8	No	P/D	14	–	1¼
Hahn Inc. Evansville, IL 812/428-2024	Spray Pro	4975	G	4	SW	–	1160	1500	St	St	90day	–	10	No	F	11	–	5
Heckendorn Mfg. Cedar Point, KS	73901	–	G	3	SW	–	570	–	St	–	1	–	10	No	P	8	2	1½
	75902	–	G	4	SW	–	862	–	St	–	1	–	10	No	P	8	2	3
	76901	–	G	4	SW	–	1300	–	St	–	1	–	10	No	P	8	2	10
	77902	–	G	5	SW	–	1010	–	St	–	1	–	10	No	P	8	2	3
	78901	–	G	5	SW	–	1500	–	St	–	1	–	10	No	P	8	2	10
E-Z Go/Textron Augusta, GA 800/241-5855	GT-7	4500	G	3	SW	264	1400	1500	St	St	90day	–	5-7	Yes	P	–	–	8.5
Jacobsen/Textron Racine, WI 414/637-6711	UV-4	7500	G	4	SW	–	1460	1500	St	St	1	9.3mpg	5	No	P	–	–	5.3
Rivlex Ind.	Daihatsu	4800	G	4	SW	150	1180	1300	St	St	1	40mpg	–	No	P	12	12	8.6
Smithco Wayne, PA 215/688-4009	Little Red	2000	G	3	HB	–	650	500	St	St	1	–	8	No	P	–	–	.9
	Red Rider	2500	G	3	HB	–	750	1000	St	St	1	–	8	No	P	–	–	.9
Taylor-Dunn Mfg. Anaheim, CA 714/956-4040	Model 5	4065	E	4	SW	132	1428	6000	St	St	–	8hrs.	7	–	P	12	12	–

abbreviations:
SW—steering wheel **HB**—handlebar **T**—tiller **Al**—aluminum **St**—steel **Fg**—fiberglas **Ur**—urethane **P**—purchaser **D**—dealer **F**—field service rep

Notes:
1. weight without batteries 2. weight without gasoline 3. 18 holes/quart

Any turfgrass seed works

RUGBY KENTUCKY BLUEGRASS IS DESIGNED TO WORK IN THE REAL WORLD.

well with constant attention.

RUGBY KENTUCKY BLUEGRASS.
IT DOESN'T NEED CODDLING TO LOOK GREAT.

As a turf professional, you know all the tricks to making grass look terrific. You lavish water and fertilizer on it, overseed, apply herbicides, and take great care in mowing.

But times are changing. Increasingly you're finding yourself pinched by escalating costs for materials and labor. And there's a growing movement among environmentalists to lessen dependence on fertilizers.

Rugby Kentucky Bluegrass answers these problems.

YEARS OF TESTING.

Rugby is a new Kentucky bluegrass. But it's not unproven. Before it was ready to be introduced to you, years of extensive testing were performed under a broad range of climatic and soil conditions. Test sites were located not only in the United States, but Canada as well.

The results? Our testing has shown Rugby to be unique. It's a truly *different* variety from anything else on the market, with superior performance.

How is it superior? Read on.

A TRUE LOW-MAINTENANCE TURF.

The most singular advantage of Rugby is its ability to provide high-quality dark green turf when maintained at *low* nitrogen fertility and restricted moisture levels.

Most improved Kentucky bluegrass varieties are *not* low-fertility types. You may be told they performed well in turf trials. Unfortunately, you're *not* told that those trials are often conducted using *optimum* nitrogen levels. So it's no wonder you have to fertilize the heck out of these varieties to get good results.

Not so with Rugby. *You can actually get better results with Rugby than with other Kentucky bluegrass varieties while using less nitrogen fertilizer.*

And you'll also save on the *labor* it would take to apply that extra fertilizer and to do the extra mowing.

A HIGH-QUALITY TURF.

But no matter how much we tell you about the low-maintenance aspects of Rugby, ultimately you look for — and demand — *superior turf.* Your professional standards wouldn't settle for anything less. And we wouldn't want it any other way.

Rugby has a rapid spring green-up rate and excellent fall color. And it also displays *sustained growth during the mid-summer heat stress period,* even under low nitrogen fertility and restricted moisture.

Moreover, Rugby possesses a high level of resistance to most of the common and current turfgrass diseases. This is another factor which may well result in significant savings in turf management costs.

THE ENVIRONMENTALIST'S GRASS.

Using less water and fertilizer means potential dollar savings for you, of course. But you can also take satisfaction in the fact you'll be using *fewer natural resources.*

By now you're well aware of the increasing social consciousness among the population in this regard. And by making available a Kentucky bluegrass that fits the world of the '80's, we believe we're fulfilling an important need.

For more information on Rugby, write Rugby Kentucky Bluegrass, P.O. Box 923, Minneapolis, MN 55440.

Rugby
KENTUCKY BLUEGRASS
For low-maintenance turf.

Circle No. 135 on Reader Inquiry Card

Two major sizes *of turf vehicles are marketed today. The vehicle should only be used within its capabilities and maintained according to use and conditions.*

TURF VEHICLE MAINTENANCE INCLUDES KNOWING LIMITATIONS

by EDGAR COMBEST

One of the more popular units of equipment found in daily use in landscape maintenance procedures is the utility vehicle. These compact but efficient "work horses" are depended on for a variety of jobs. It would be difficult to imagine a golf course, cemetery or institutional grounds without one or more of these truckster-type vehicles.

There are two major sizes marketed today. A smaller version, represented by the Toro Workmaster and the Red Ryder, has an engine capacity of 14 horsepower or less. Although their weight and box capacities are designed to handle accessories for heavier work loads, they are mainly utilized by supervisory personnel and for jobs requiring lighter loads.

Cushman Truckster and E-Z-GO GT7 are models of the larger type and have a greater horsepower (18 HP) than their smaller counterparts. These vehicles have more optional accessories than a new Mercedes. Included in this list is a hydraulic dump box or flat bed, aerator, spiker, seeder/spreader, topdressing machine and a 100 gallon spray tank assembly. Maintenance tasks requiring many separate power sources can now be accomplished with one of these vehicles and the proper selection of accompanying attachments.

Because of this increased versatility, these units are in constant use throughout each working day and require a regimented preventive maintenance schedule if they are expected to work properly and to last through an estimated period of life expectancy without expensive repairs.

Edgar Combest is an Instructor at the School of Golf Course Operations, Lake City Community College, Lake City, Florida.

Schedule One

A general pattern for preventive maintenance procedures that is reflected in the manufacturer's manuals for these vehicles is shown in Table 1.

These are guidelines for units that are used under normal operating conditions. It is important not to overlook obvious adjustments to this schedule when the operating environment is more or less severe, such as extremely dusty conditions or long operating hours during the above time periods. Under dirty conditions the frequency of the maintenance schedule should be increased. The opposite approach should be taken if use is below normal for those time periods.

Problem areas

Problems encountered with utility vehicles are generally caused by the operator exceeding the limits of their designed capabilities. Even with the larger types, that can handle loads over 1500 pounds, overloading often occurs. This is evidenced by frequent breakdown and subsequent replacement of front wheel bearings and rear axle

continues on page 50

"Mitsubishi tractors-the tough team that's never sidelined."

Bum Phillips, Head Coach, New Orleans Saints

In my business, I demand pro performance, the first time and everytime. That's why I want to tell you about the Mitsubishi line of two and four-wheel, mid-size tractors. Tractors built tough, to tackle all your landscaping and turf maintenance jobs, reliably and economically year after year.

Whether it's the compact Beaver, the economical Bison Diesel or the 38 hp, rugged Stallion, all Mitsubishi tractors can handle the implements you need for mowing, loading, grading, snow removal and lots more. And Mitsubishi's multi-cylinder, water-cooled, diesel engines keep fuel consumption low and performance consistently high.

Designed with you, the grounds maintenance professional in mind, Mitsubishi tractors have tough-job features like a differential lock for greater traction, live hydraulics for really accurate implement control and multi-speed PTO for equipment flexibility.

Bison Diesel
30 hp

So, as one pro to another, if quality performance is the name of your game, check out the winning team of mid-size tractors built by the pros—Mitsubishi.

MITSUBISHI

Built by the PROS

For more information, see the yellow pages for your local dealer or write to Sumitomo Corp., Mitsubishi Tractor Division, 345 Park Ave., New York, NY 10154, (212) 935-8826.

Circle No. 124 on Reader Inquiry Card

TABLE I

DAILY	check battery fluid level
	check tire pressure
	check oil level
WEEKLY (50 hrs. of operation)	clean engine
	change crankcase oil
	service air cleaner
MONTHLY (100 hrs. of operation)	lubricate clutch and throttle linkage
	check transmission(s) and differential oil levels
	tighten all loose screws and nuts
	adjust brakes and clutch
	tune engine
	check master cylinder fluid level
	lubricate power take-off shaft
	lubricate drive shaft
EVERY 2 MONTHS (200 hrs of operation.)	replace oil filter
	lubricate starter drive
ANNUALLY	change transmission(s) oil
	change differential grease
	replace fork pivot, wheel and axle bearings
	lubricate steeering gear

bearings.

A common complaint of grounds managers in regard to the utility units is engine overheating during normal use. In a majority of these cases, the overheating is caused by the engine not being timed properly (also timing of fuel pump in OMC engine) and not the stress of the workload. Improper or no cleaning at all of the engine, including cooling fins and incorrect SAE and type of oil along with a poor grade of fuel also creates conditions for overheating to occur. OMC and Onan engines should be periodically tuned to guarantee optimum performance and fuel efficiency.

An inventory of a few key parts for any unit of equipment is always a good idea. For utility vehicles it is suggested that a supply of seals, wheel bearings, tires, spark plugs, points, condensers and brake lines be kept on hand. If a reputable distributor is located nearby and has an adequate inventory of vehicle parts, then a personal supply need not be extensive.

Maintenance and repair of these units can easily be accomplished with the normal complement of mechanical tools including torque wrench, tachometer, dial indicator and a set of micrometers. However, some special tools marketed by the individual manufacturers can simplify some complicated procedures. An example is the OMC special seal drive tools, that when used as recommended, will set the seals at the specified depth.

The manufacturers sponsor factory training schools and distributors sponsor local area workshops to train individuals on specific problem areas of their equipment.

Distributor relationship

When contacting the parts department of the utility vehicle distributor concerning a problem or part replacement, always give them the proper part name and number. A little time and thought to check the microfiche cards or parts manual will save a lot of time and frustration for you and the parts person in obtaining satisfaction and the proper part. This approach will inform the parts department personnel of exactly what you want and not leave him guessing or allow him to give you what he thinks is the right part.

Problems that require consultation with the service department can be communicated better if an honest, straight forward approach is used. State, as simply as possible, what is happening. Do not adopt a defensive posture and curse the particular manufacturer or unit involved. Keep in mind that most problems are created by improper use and lack of adequate servicing, not by the product manufacturer. However, when problems arise that are directly related to the manufacturing process, manufacturers appreciate whatever feedback the operators or managers in the field can give them. The normal flow of feedback information should be from the user to the distributor's service department and from there to the manufacturer.

Distributors and manufacturers spend considerable effort and money for the purpose of educating customers in the proper handling and servicing of their particular products. Adherence to these established guidelines will prevent a lot of common problems observed in the field today.

Training personnel

A very common cause of equipment failure, and sometimes just plain destruction, is the operator's inability to adequately utilize the equipment. Down time and costly repairs can be traced directly to poor training of employees by the manager on proper use and care of the equipment.

Turf managers, as part of their responsibilities, should develop a detailed job procedure for use of equipment in each major function of their operation. Time should be taken with each new employee to explain the cost, limitations and proper conduct when working the mechanical unit.

The "Four-step Program" on how to instruct, as described in *Personnel Selection and Recruitment*, published by the Administrative Management Society is a proven guide to follow when developing a job procedure.

The "Four-step Program" ends with this conclusive message to supervisors: "If they haven't learned,

continues on page 52

GIVE MALLINCKRODT YOUR FUNGUS, WEEDS AND ROT, YOUR BROWN AND BARREN TURF.

GET MEAN ABOUT GREEN WITH MALLINCKRODT'S VERSATILE TURF LINE.

Green is what you want—from tee to green.

Mallinckrodt's line of proven turf products has the proven way to get it.

Whether you want broad spectrum control, or the solution to a specific problem, get tough about it with the just-right answer...

FROM THE GREEN GROUP AT

Mallinckrodt®

MALLINCKRODT, INC.
ST. LOUIS
JERSEY CITY
LOS ANGELES

Circle No. 123 on Reader Inquiry Card

you haven't instructed."

The utility vehicle is a relatively simple unit of equipment to learn to handle. Anyone having the experience of driving a car with standard transmission can adapt quite readily. Proper respect and common sense in using any vehicle should prevail.

A portion of the training session should deal with the proper care and maintenance of new equipment. Many problems occur due to neglecting the crucial breaking in of a new unit.

New engines require a breaking-in period of minimum stress and constant monitoring for initial problems covered by the manufacturer's warranty. The following procedures are general in nature but apply to most new engines during the breaking-in period.

1. Keep speeds to a minimum for the first week of operation.
2. Increase speeds gradually over a period of two to three weeks until desirable maximum is reached.
3. After approximately two weeks, drain the crankcase oil while the engine is warm and replace with recommended type and weight engine oil.
4. Never race engine when in neutral or in low gears.
5. Do not subject engine to maximum stresses or speeds until after a month of operating time.

Safety considerations

Even though utility vehicles on the market today have low center of gravity designs, they should be driven with caution on slopes and when making turns. All manufacturers mentioned produce three-wheel models (Cushman has a four-wheel option) which when making sharp turns at high speeds can easily throw the operator off balance or dump the payload.

The utility vehicle is subject to specific safety rules of operation. Repetition of these key points should be included during the training period and periodically reinforced through supervision of equipment operators.

TABLE 2

Four Step Training Program

STEP 1 — Prepare the worker
Put him at ease.
State the job and find out what he already knows about it.
Get him interested in learning the job.
Place in correct position.

STEP 2 — Present the operation
Tell, show and illustrate one IMPORTANT STEP at a time.
Stress each KEY POINT.
Instruct clearly, completely and patiently, but no more than he can master.

STEP 3 — Try out performance
Have him do the job—correct errors.
Have him explain each KEY POINT to you as he does the job again.
Make sure he understands.
Continue until YOU know HE knows.

STEP 4 — Follow up
Put him on his own.
Designate to whom he goes for help.
Check frequently.
Encourage questions.
Taper off extra coaching and close follow-up.

1. Learn the reason for all of the controls on the vehicle. Read the owner's manual completely before operating the vehicle.
2. Place the gear in neutral and apply the handbrake before starting engine.
3. When vehicle must be towed be sure it is in neutral gear. If it contains an auxiliary transmission, it too should be in neutral.
4. Vehicles with hydrostatic transmissions should have special attention before and during towing. Before towing be sure to open tow valve and it should remain open during towing. Towing should be limited to on and off trailers and in and out of maintenance complex at low speed. Do not tow for long distances or high speed.
5. Feet should be kept inside the vehicle when it is in motion.
6. Reduce speed when operating on slopes, rough ground and in wet conditions.
7. Steering of these vehicles is very responsive. Be careful not to oversteer, especially at higher speeds. Always keep both hands on the steering wheel or handle bars.
8. Be familiar with hand signals and use them when making turns in heavy traffic areas.
9. Do not hang anything or attach ropes, line, etc. to steering wheel or handle bars.
10. When parked, the hand brake should be locked and engine stopped.
11. Do not ride more people than is designed by the seating capacity.

The utility vehicle has been the mainstay of landscape maintenance procedures over the years. With the adoption of key accessory items that can be easily attached, it has gained a new status of efficiency and importance in today's modern management schemes.

By establishing and utilizing a systematic preventive maintenance program, being trained in the mechanical and physical limitations of specific units and keeping an adequate supply of key parts and special tools, these vehicles will give good performance over the duration of their life expectancy.

If and when problems occur, pleasant and proper communications with the service areas of the distributor and/or manufacturer will, in most experiences, achieve satisfactory solutions. **WTT**

Legend.

Out of the ordinary—into the great.

There's nothing ordinary about Legend. From its super-tough Reaction Injection Molded (RIM) urethane body to its super-efficient Terrell differential, Legend is built for extraordinary performance and durability.

Legend even looks different. With a body design molded into the sleek, sporty lines that look right at home at the most exclusive clubs. Since it can withstand most impact without damage — and resist dents, cracks, rust and corrosion — Legend's body will still look great long after other golf cars have been replaced.

We've put the same original thinking into Legend's mechanical design, too. Top-quality components are conveniently arranged so you can complete any necessary maintenance quickly and easily. That's why Legend stays on the course — year after year.

Why drive an ordinary golf car when you can drive Legend — the new golf great.

For all the details, call or write:

Eagle Vehicles, Inc.
8181 Hoyle Avenue
Dallas, Texas 75227-4292
(214) 388-7431

LEGEND
GOLF CARS

THE FORGOTTEN TREES

Sassafras, Catalpa, and European Alder

by DOUGLAS J. CHAPMAN

Three low-maintenance trees, almost forgotten in the trade, which have exciting potential for use in the landscape include Sassafras, Catalpa, and European Alder. These plants have differential adaptions to many of our difficult landscape situations, while being resistant to most catastrophic insect or disease problems.

Sassafras *(Sassafras albidum)* is a native tree which is difficult to transplant but fills a unique place in the landscape. Its native range is from New England to Michigan and south to Texas and Florida. Sassafras' mature habit is somewhat conical, reaching 30 to 50 feet in height and 20 to 35 feet in width when grown as a single stem. In a natural setting, it is often found as a plant that creeps over the landscape, spreading by root suckers. It has an interesting habit throughout the year. The foliage has three distinctly different leaves—with and without lobes and somewhat oval. The yellow-green summer foliage fades to a riot of color in the fall, ranging from scarlet-yellow to a deep maroon and purple. *Sassafras albidum* has a tap root, making it difficult to transplant but extremely drought resistant. This tree might propagate easily from softwood cuttings, thus leading to a new production technique. It is natively found growing in well-drained, sandy soils in the flood plain of a mature river. It requires well-drained soils, declining if clay is in the soil composition. It is somewhat sensitive to salt spray but has no real insect problems. When considering disease, there are few catastrophic problems. Foliar diseases are minimal but stem cankers can cause a problem. Normally stem cankers are an indication of stress, e.g. soil compaction or winter injury, but in the southern Appalachian region, Nectria Canker has potential to be a problem. In a native situation, Sassafras is often associated with redcedar, ash, oak, and hornbeam. It is a sun-liable plant, that is, it must be grown in full sun or decline will set in. When considering landscape use, it is particularly well adapted to parks, golf courses, and large area or commercial landscapes in a somewhat native—mass planting or as a single-stem specimen.

***Sassafras** exhibits scarlet-yellow fall color and has three distinctly different leaves. Transplanting is difficult due to a tap root.*

Catalpa *(Catalpa speciosa)*, a tree often used during the early 1900's, is now difficult to find in the trade, almost forgotten. It has a somewhat oval, irregular habit at maturity, reaching 40 to 60 feet and 20 to 35 feet in width. The foliage is whorled, opposite, and very coarse textured. The leaf color is a dull yellow-green during the growing season with the leaves not developing color in the fall. Catalpa's bell-shaped white flowers (reminding one of orchids) appear in late June. The fruit are 8- to 20-inch long pendulous green pods. Catalpa is native to Indiana and Tennessee but can readily be grown throughout the Northeast and Midwest. When considering soil adaption, Catalpa adapts to almost any condition. It is often found in wet, poorly-drained soils, tolerating compaction well but will also do exceptionally well in droughty soils. It has a tap root and is a good companion plant in fine turf. Catalpa is somewhat resistant to salt and seems to thrive in most urban conditions. *Catalpa speciosa* is a tree that must be planted in full sun to thrive. It lends itself exceptionally well to home landscapes and park situations when a unique specimen is needed but is a problem as a street tree. When grown under the stress of street tree conditions, Verticillium Wilt is often a problem but, under ideal conditions of good vigor, this ring-poor tree often outgrows or overcomes early invasion of Verticillium Wilt. Catalpa is extremely resistant to breakage by ice storms and requires little pruning. Although it is somewhat coarse, almost grotesque in habit, *Catalpa speciosa* does have a place in the landscape.

Douglas J. Chapman is a Horticulturist at Dow Gardens, Midland, Michigan

Continues on page 56

ONLY A TREE TRIMMER CAN APPRECIATE HI-RANGER'S MOST INTRICATE MOVES.

The big difference between tree-trimming in a Hi-Ranger and tree-trimming in any other manlift is Hi-Ranger's maneuverability. The way Hi-Ranger moves you **right to** your work. Where you can do your best. And move on to the next job without a lot of worry.

The bucket moves in the very same direction or combination of directions the 3-D One-Hand Control is moved. In a straight-line. Or around objects and tree limbs. Keeping the bucket and operator level at all times. All in one smooth motion. Let go of the 3-D Handle, and the Automatic Safety Trigger stops the bucket movement.

Hi-Ranger's outstanding maneuverability is unmatched. A combination of superior, long-proven engineering ideas. 3-D One-Hand Control. Coordinated Boom Action. Automatic Leveling. Continuous 360° Turntable Rotation. And Hi-Ranger's "Safety Group" of standard features and accessories. Making Hi-Ranger more popular with arborists than any other aerial manlift for over 30 years.

You can do better work quicker when the job is within easy reach. Trim time and save money with Hi-Ranger. Call your Hi-Ranger dealer or contact us today.

Mobile Aerial Towers, Inc., 2314 Bowser Avenue
P.O. Box 11647, Dept. N, Fort Wayne, IN 46859, 219-744-6181

Hi-Ranger aerial towers meet the "American National Standard for Vehicle-Mounted Elevating and Rotating Aerial Devices" ANSI A92.2-1979.

Hi-Ranger "Linesmen II" Tree-Trimmer. Variety of models up to 57'.

LOOK UP TO HI-RANGER.

Circle No. 126 on Reader Inquiry Card

A Practical-NEW Brush Chipper, Designed and Manufactured by ASPLUNDH...Producers of Quality Equipment.

The CHIPMUNK Brush Chipper

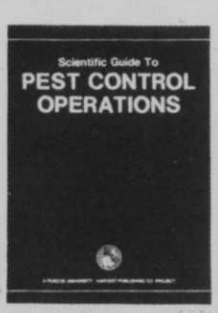
- Improved Performance
- Economical Operation
- New Feed Guide
- Improved Maintainability
- Compact Size and Weight

ASPLUNDH

50 E. HAMILTON STREET, CHALFONT, PA. 18914

Circle No. 104 on Reader Inquiry Card

Scientific Guide To Pest Control Operations



by Dr. L.C. Truman
Dr. G.W. Bennett and
Dr. W.L. Butts

Domestic: $23.00* (hardcover)
Foreign: $28.00* (hardcover)

The SCIENTIFIC GUIDE TO PEST CONTROL OPERATIONS is designed to provide a sound basis for studying the scientific aspects of pest control and promote technical competence. It places emphasis on urban and industrial pest problems. This volume also covers the laws and regulations concerning the pest control industry.

The SCIENTIFIC GUIDE TO PEST CONTROL OPERATIONS is written for owners, supervisors, servicemen, salesmen, students, persons preparing for state certification under the EPA/state programs for commercial pesticide applicators, and people interested in structural pest control.
The SCIENTIFIC GUIDE TO PEST CONTROL OPERATIONS - a *must* for anyone involved in the field of pest control!

Return this coupon to: Book Sales
Harcourt Brace Jovanovich Publications
One East First Street, Duluth, MN 55802

Domestic: $23.00* (hardcover)
Foreign: $28.00* (hardcover)

YES! Please send me_____copy(ies) of the SCIENTIFIC GUIDE TO PEST CONTROL OPERATIONS.
A check or money order for_____is enclosed.
Please charge to my Visa, Master Card, or American Express (circle one)
Account Number_____Expiration Date_____
*Please add $2.50 per order plus 25¢ per additional copy for postage and handling.
Name_____
Address_____
City_____State_____Zip_____
Signature_____Date_____
Phone_____

Quantity rates available upon request.

Pleast allow 6-8 weeks for delivery.

Trees *from page 54*

European Alder *(Alnus glutinosa)* is an outstanding plant that adapts well to wet, heavy soil, has a rapid rate of growth, and, at maturity, has a somewhat oval habit, reaching 40 to 60 feet in height and 20 to 30 feet in width. European Alder foliage is a rich dark green during the growing season, but fall color is essentially nonexistent. The male flowers are pendulous catkins, 2 to 4 inches in length, which develop during early spring in central Michigan and earlier as one moves south to Northern Illinois and Ohio. The small, cone-like fruit remain on the tree throughout the winter, reminding one of a hemlock or other conifer. This plant has a lot of genetic variability. Several selections or cultivars should be considered. One particular selection of *Alnus glutinosa*, we have been interested in, develops red or maroon new growth which contrasts well against the dark green foliage. The soil conditions in which this plant thrives include heavy wet soil, although it does tolerate drought to some extent. Under normal conditions, it will grow 3 to 4 feet in height and rapidly can fill in as hedge or screen plantings. Disease problems are essentially nonexistent but two insects are worth considering. These include Leaf Miner and Wolly Alder Aphid. It should be stressed that these problems rarely require the application of pesticides. European Alder is outstanding as a hedge or in mass plantings for large area landscapes (replacing Lombardy Poplar).

When looking for unique trees which adapt well, why not consider European Alder for its tolerance of wet soils and its ability to grow as a dense screen or hedge; Catalpa as a tree which thrives in turf, is drought tolerant, and a unique specimen for home, park, or large-area landscapes; and Sassafras, the difficult to transplant native, which can provide a riot of color during the fall. **WTT**

Classified Advertising is
• Easy • Effective
• Economical

For information contact:
J & L ADIKES, INC.
Jamaica, N.Y. 11423
JACKLIN SEED CO.
Post Falls, ID. 83854
NORTHRUP KING CO.
Minneapolis, MN. 55413
ROTHWELL SEEDS LTD.
Lindsay, Ont., CAN. K9V 4L9
VAUGHAN-JACKLIN CORP.
Bound Brook, N.J. 08805
Downers Grove, IL. 60515

incomparable

FOR A THICKER GREENER TURF

Adelphi* KENTUCKY BLUEGRASS

THE **GREENER** KENTUCKY BLUEGRASS™

*U.S. Plant Pat. No. 3150

VEGETATION MANAGEMENT

By Roger Funk, Ph.D., Davey Tree Expert Co., Kent, Ohio

Q: *Where is the best time to control spotted spurge in bermudagrass, and what chemical do you recommend? (Florida)*
A: DCPA (Dacthal) applied before the soil temperature stablizes above 55° F. and reapplied one or two times at 60-day intervals has reportedly given good control. However, multiple applications are costly and potentially phytotoxic to the turfgrass, particularly if applications are made over several seasons.

Postemergent control with two treatments of bromoxynil applied about four weeks apart also provides good control of spotted spurge. Some phytotoxicity evidenced as temporary tip burn may occur on common bermudagrass.

Q: *How much ryegrass seed should be mixed with Kentucky bluegrass seed when fusarium blight is a problem? (California)*
A: A mix containing 10%-15% perennial ryegrass has been found optimal in most cases to mask the disease symptoms. This mix should result in a 50:50 bluegrass: ryegrass plant count relationship.

Q: *Is red fescue the best turfgrass for shaded areas? (Pennsylvania)*
A: Red fescue (*Festuca rubra* L.) is still the recommended species for shade in the northeastern states. Also, some of the newer Kentucky bluegrass cultivars will tolerate up to 60% shade. If the area is also wet, rough bluegrass (*Poa trivialis* L.) is sometimes recommended.

Q: *What is a stool sprout? Is it any different from what we call a stump sprout? Could you also tell me how long a stump will continue to live after the tree is cut? (Ohio)*
A: A "stool sprout" develops from adventitious buds which arise from between the bark and wood of stumps. (Adventitious buds do not originate in the axils of leaves but are formed irregularly on older portions of stems.) Such sprouts are usually short-lived.

"Stump sprouts" are normally described as arising from dormant buds which developed in leaf axils and are connected to the pith by a bud trace. Stump sprouts can produce new trees.

If deprived of sprouts, most stumps die within two years as the stored carbohydrates are depleted in the root tissue. However, the root system can survive for many years if root grafted to a remaining tree which supplies carbohydrates and growth regulators.

Q: *Could you tell us how lightning actually kills the tree when it strikes? (N.Y.)*
A: Although trees are attractive lightning targets because of such factors as height, root depth and wood properties, they are highly subject to damage since trees are not good conductors of electricity and offer resistance to the travel of lightning current.

When the bark is smooth and uniformly wet, electric current may be effectively conducted through this external water resulting in leaf scorch, bark fissures and other superficial injuries. However, internal conduction along the cambium or other moist tissue causes heat buildup resulting in a disruption of physiological processes, cellular death and mechanical splitting or tearing of wood and bark tissues. The thermal death point of most active cells occurs between 50° and 60° C. In many cases, when only minor injury is evident on the trunk, considerable injury has occurred to the roots.

In addition to direct injury, lightning may predispose the injured tree to pathogens and/or bark beetles that are ultimately responsible for death.

Q: *A disease on two of the Kentucky bluegrass lawns we service was identified as fading out. I have not been able to find it in any of our disease books. What is it and how do you control it? (Maryland)*
A: Species of *Curvularia* have reportedly caused a disease called "fading out," often in combination with leaf spot. Irregular patches of turf turn pale green, then yellow during the hot summer months and appear to be drying out, even when there is sufficient soil moisture. Kromad, Daconil 2787, or Actidione thiram, applied before the disease starts or in its early stages, should control *Curvularia* fading out. However, since there may be another disease known locally as fading out, you should ask the person who identified the disease to provide the scientific name of the causal organism.

Send your questions or comments to: Vegetation Management c/o WEEDS TREES & TURF, 757 Third Avenue, New York, NY 10017. Leave at least two months for Roger Funk's response in this column.

O. J. NOER RESEARCH FOUNDATION
Sustains Turf Grass Research

For further expansion of important projects your support is needed. Be a part of future research. Send your contribution to:

O. J. NOER RESEARCH FOUNDATION, INC.
Robert J. Welch, Secretary-Treasurer
301 So. 61st St.
Milwaukee, WI 53214

WE'VE GOT THE DRIVE TO KEEP YOU CUTTING.

WITHOUT CLUTCHING.

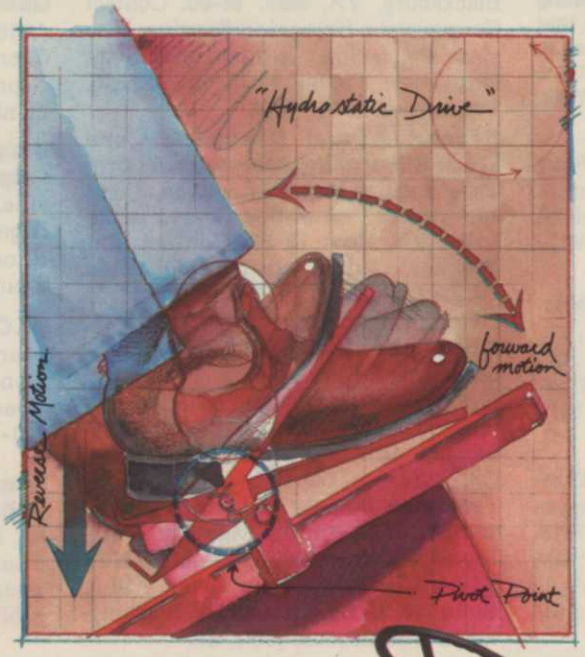
We go all out to give you the kind of riding rotary mower you want most.

A mower that keeps you cutting. Gets the job done.

So we equip our Toro Groundsmaster 72® and Groundsmaster 52® mowers with hydrostatic drive. For greater durability in four ways.

One, it keeps you cutting without clutching. Which means no downtime to replace belt, chain or clutch. Because there are none to replace.

Two, you get easy, one-pedal operation of forward and reverse. No costly gear stripping caused by improper shifting.



Three, our drive is constantly lubricated by hydraulic fluid. Reducing friction and parts wear even more.

Four, unlike other hydrostatic drives, ours has direct drive coupling. And combines motor and pump in a single housing, without the usual hoses and belts connecting two units.

And we add more durability with other features designed to keep you cutting. Like a Donaldson air cleaner and a unique cone shaped spindle.

Call your Toro® distributor. He'll tell you all you want to know about Toro riding rotary mowers.

Without clutching.

TORO®

THE PROFESSIONALS THAT KEEP YOU CUTTING.

Toro is an exclusive trademark of The Toro Company
8111 Lyndale Ave. So., Minneapolis, Minnesota 55420.

Circle No. 140 on Reader Inquiry Card

EVENTS

The current issue of WEEDS TREES & TURF carries meeting dates beginning with the following month. To insure that your event is included, please forward it, 90 days in advance, to: WEEDS TREES & TURF Events, 757 Third Ave., New York, NY 10017.

Aquatic Plant Control Research Planning and Operations Review, Annual Meeting, Radisson Plaza St. Paul, St. Paul, MN, **Nov. 16-18.** Contact W.N. Rushing, 601/634-3542.

New York State Turfgrass Association Conference & Trade Show, Albany, NY, **Nov. 16-19.** Contact Ann Reilly, NYSTA, 210 Cartwright Blvd., Massapequa Park, NY 11762, 516/541-6902.

1981 New York State Turfgrass Conference and Trade Show, Empire State Plaza, Albany, NY, **Nov. 17-18.** Contact Janet Worthington Dudones, Ed Worthington Corp., 50 Petrova Ave., Saranac Lake, NY 12983, 518/891-1830.

Landscape Management Minicourse, Blacksburg, VA, **Nov. 18-20.** Contact Cooperative Extension Service, Virginia Polytechnic Institute and State University, Patton Hall, Blacksburg, VA 24061, 703/961-6491.

Second Annual Convention and Trade Show of the Professional Lawn Care Association of America, Commonwealth Convention Center, Louisville, KY, **Nov. 18-20.** Contact Jane Stecker, Administrative Director, PLCAA, Suite 1717, 435 N. Michigan Ave., Chicago, IL 60611.

Christmas Nursery Retail Tour, Southern California, **Nov. 19.** Contact Lanny E. Walker, Public Relations Director, California Association of Nurserymen, 1419 21st Street, Sacramento, CA 95814, 916/448-2881.

American Society of Landscape Architects 81st Annual Meeting, Washington Hilton, Washington, D.C., **Nov. 21-24.** Contact William Oyler, ASLA, Suite 750, 1900 M Street NW, Washington, DC 20036 (202) 466-7730.

12th Annual GCSA/University of Georgia Turfgrass Short Course, Athens, GA, **Nov. 23-24.** Contact George M. Kozelnicky, University of Georgia, c/o Dept. of Plant Pathology & Plant Genetics, Athens, Georgia 30601.

Seventh Annual Professional Landscape Management School, Evansville, IN, **Nov. 24-25.** Contact Allen Boger, Extension Agent, Horticulture, Room 202, City-County Building, Evansville, IN 47708.

ALCA Design/Build Symposium, Marriot-North, Dallas, TX, **Dec. 2-4.** Contact ALCA, 1750 Old Meadow Road, McLean, VA 22102, 703/821-8611.

Minnesota Nurserymen's Association Convention, Radisson South Hotel, Minneapolis, MN, **Nov. 29-Dec. 1.** Contact Minnesota Nurserymen's Association, 1360 Terrace Drive, St. Paul, MN 55113, 612/633-4987.

American Society of Agronomy, Crop Science Society of America and Soil Science Society of America, 73rd Annual Meeting, Atlanta, GA, **Nov. 29-Dec. 4.** Contact American Society of Agronomy, 677 South Segoe Road, Madison, WI 53711, 608/274-1212.

Ohio Turfgrass Conference and Show, Columbus, OH, **Dec. 2-4.** Contact David P. Martin, Ohio Turfgrass Foundation, Ohio State University, 1827 Neil Avenue, Columbus, OH 43210, 614/422-2591.

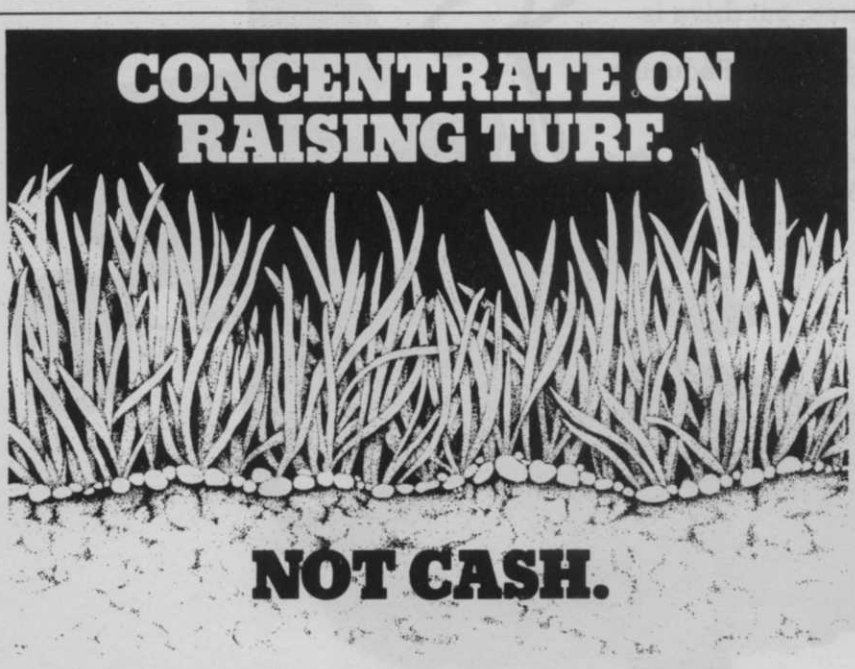
Minnesota Golf Course Superintendents Association, Annual Conference, Sheraton Inn Northwest, Minneapolis, MN, **Dec. 2-4.** Contact Nathan Dunn, 1900 Hazeltine Blvd., Chaska, MN 55318.

Texas Turfgrass Conference, College Station, TX, **Dec. 7-9.** Contact Dr. Richard L. Duble, TTC, Soil & Crop Sciences Dept., Texas A & M University, College Station, TX 77843, 713/845-4826.

New Jersey Turfgrass Expo '81, Cherry Hill Hyatt House, Cherry Hill, NJ, **Dec. 7-10.** Contact Dr. Henry Indyk, Soils & Crops Dept., Cook College, P.O. Box 231, New Brunswick, NJ 08903, 201/932-9453.

Turfgrass Short Course, Blacksburg, VA, **Dec. 7-11.** Contact Cooperative

Continues on page 62



You need a lot of equipment for effective turf management. And we lease it all. Mowers, spreaders, sprayers, tractors and aerators, just to name a few.

Quite simply, we specialize in leasing this equipment so you can keep your credit open for other operating expenses and conserve your capital.

Leasing. It's the smart way to grow, and a real hedge against inflation. Find out more by calling us at 800-547-4905. The call's on us.

Industrial Leasing Corporation

Executive Offices • 2300 S.W. Sixth Avenue • Portland, Oregon 97201 • (503) 228-2111
Offices located in principal U.S. cities

Circle No. 116 on Reader Inquiry Card

Roundup® makes him a one man army to fight weeds.

One man with Roundup in a backpack sprayer can handle many weed control jobs that once took several people.

General weed control. Edging. Trimming. Small renovation jobs. Roundup® herbicide helps make all of these a one man job.

Sprayed on the foliage of tough, actively growing weeds, Roundup goes right down to the roots, controlling the entire plant. Treated weeds won't grow back. So there is less need for repeat treatments, mowing and hand weeding.

One man can do the work of several, and in less time. This can mean a savings for you in time, labor and maintenance costs.

Reach for Roundup today, and put your own one man army to work.

Nothing works like Roundup.

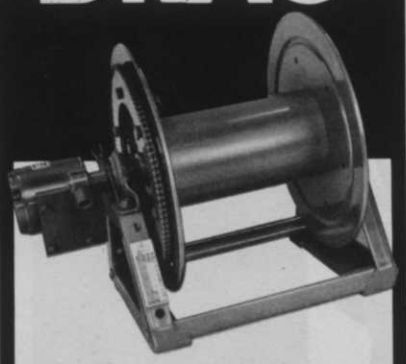
Monsanto

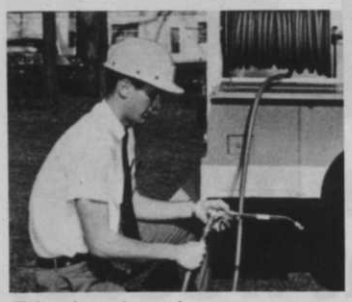
FOR LITERATURE
CALL TOLL-FREE
1-800-621-5800
In Illinois, 1-800-972-5858.

Circle No. 127 on Reader Inquiry Card

ALWAYS READ AND FOLLOW THE LABEL FOR ROUNDUP.
Roundup® is a registered trademark of Monsanto Co.
RUP-SP1-114D © Monsanto Co. 1981

HOSE WITHOUT A REEL IS A DRAG





Eliminate hose mess with Hannay Reels!

- Store hose neatly, ready to go when you are.
- Pull out smooth & easy. Wind up straight & fast.
- Less wear and tear on you and the hose.
- Fertilizers. Pesticides. Herbicides. Whatever you spray, rely on Hannay!

Request a Free Reel Guide Today!

HANNAY REELS

CLIFFORD B. HANNAY & SON, INC., WESTERLO, NEW YORK 12193

Circle No. 114 on Reader Inquiry Card

Events *from page 60*

Extension Service, Virginia Polytechnic Institute and State University, Patton Hall, Blacksburg, VA 24061, 703/961-6491.

Urban Tree Management Workshop, Cook College/Rutgers University, New Brunswick, NJ, **Dec. 8 and 10.** Contact Norma Wanson, Cook College, P.O. Box 231, New Brunswick, NJ 08903, 201/932-9271.

International Society of Arboriculture, Chapter Meetings; **Kentucky—** Galt House Hotel, Louisville, KY, **Dec. 8-9; Indiana—**Atkinson Hotel, Indianapolis, IN, **Jan. 5-7; New York State Arborists—**Hilton, Albany, NY, **Jan. 17-20;** and **Ohio—**Hyatt Regency, Ohio Center, Columbus, OH, **Jan. 24-25.**

Management Information Seminar, Columbia Inn, Columbia, MD, **Dec. 9-10.** Contact ALCA, 1750 Old Meadow Road, McLean, VA 22102, 703/821-8611.

Landscape Design Short Course for Residential Properties, Cooperative Extension Service, Ohio State University, Wooster, OH, **Jan. 13-15.** Contact Fred K. Buscher, Area Extension Agent, Landscape Horticulture, OARDC, Administration Building, Wooster, OH 44691, 216/262-8176.

Twenty-Second Annual Illinois Turfgrass Conference and Tradeshow, Prairie Capital Convention Center, Springfield, IL, **Dec. 15-17.** Contact Dr. Thomas Fermanian, 1707 Orchard St., Urbana, IL 61801, 217/333-7847.

Turfgrass Disease Minicourse, Blacksburg, VA, **Dec. 15-17.** Contact Cooperative Extension Service, Virginia Polytechnic Institute and State University, Patton Hall, Blacksburg, VA 24061, 703/961-6491.

Maryland Turfgrass '82, Baltimore Convention Center, **Jan. 4-6.** Contact Dr. Thomas Turner, Department of Agronomy, University of Maryland, College Park, MD 20742, 301/454-3716.

Winter Turfgrass Course, Cook College/Rutgers University, New Brunswick, NJ, **Jan. 4-Mar. 12.** Contact Edward Lipman, Cook College, P.O. Box 231, New Brunswick, NJ 08903, 201/934-9465.

Mississippi Nurserymen's Association, Annual Membership Meeting and Seminar, Metro-Ramada Inn, Jackson, MS, **Jan. 10-12.** Contact Walter E. Davis, P.O. Box 242, Poplarville, MS, 601/795-4526.

53rd Annual Ohio Florist Short Course, Ohio Center-Hyatt Regency Hotel, Columbus, OH, **Jan. 10-13.** Contact Harry Tayama, Ohio Florists' Association, Columbus, OH 43210.

Landscape Design Short Course for Residential Properties, Cooperative Extension Service, Ohio State University, Wooster, OH, **Dec. 14-16.** Contact Fred K. Buscher, Area Extension Agent, Landscape Horticulture, OARDC, Administration Building, Wooster, OH 44691, 216/262-8176.

Mid-Atlantic Nurseymen's Trade Show, Baltimore Convention Center, Baltimore, MD, **Jan. 18-20.** Contact Mid-Atlantic Nurserymen's Trade Show, Perry Hall, MD 21128, 301/256-6474.

Nebraska Turfgrass Foundation Conference & Trade Show, Holiday Inn Convention Center, Omaha, **Jan. 19-21.** Contact Paul Bergman, 2428 W. 11 St., Hastings, NE 68901, 402/463-5055.

Michigan Association of Nurseryman Convention and Trade Show, Grand Rapids, MI, **Jan. 20-21.** Contact Richard Ahti, P.O. Box 26008, Lansing, MI 48909, 517/394-0236.

Massachusetts Horticultural Congress, Dunfey's Hyannis Hotel, Hyannis, MA, **Jan. 20-22.** Contact Deborah Fanning, Massachusetts Horticultural Congress, 715 Boylston Street, Boston, MA 02116, 617/266-6800.

ALCA Annual Meeting & Trade Exhibit, Hilton Riviera, Palm Springs, CA, **Jan. 24-29.** Contact ALCA, McLean, VA, 703/821-8611.

Professional Turf & Landscape Conference, Tappan Zee Inn, Nyack, NY **Jan. 27.** Contact Frank Claps, 136 Laurel Avenue, Larchmont, NY 10538, 914/834-6846.

Winter National Hardware & Home Center Show, Las Vegas Convention Center, Las Vegas, NV, **Jan. 30-Feb. 1.** Contact Winter National Hardware and Home Center Show, Cahners Plaza, P.O. Box 3833—999 Summer St., Stamford, CT 06905, 203/964-0000.

27th Annual Southwest Park & Recreational Training Institute, Lake Texoma Lodge, Kingston, OK, **Jan. 31-Feb. 3.** Contact James Kitchen, SPRTI, Texas Tech University, P.O. Box 4169, Lubbock, TX 79409, 806/742-2858.

Park and Recreation Maintenance-Management School, Wilson Lodge/Oglebay Park, Wheeling, WV, **Jan. 31-Feb. 4.** Contact Alice Strickland, North Carolina State University, Division of Continuing Education, P.O. Box 5125, Raleigh, NC 27650, 919/737-2261.

Sure, there's more to maintaining quality, disease-free turfgrass than a couple of fertilizer applications. But turfgrass scientists across the country are reporting that a fall application of IBDU (31-0-0) can produce turfgrass with better root development and less disease problems.

Dormant turfgrass plants continue to produce rhizomes and roots, even though vertical growth has stopped. During this time nitrogen should be made available to the turfgrass plant as carbohydrates are naturally accumulating. Thus, scientists say, the optimum timing for nitrogen applications is during the fall and early winter months.

IBDU (31-0-0) is ideally suited for dormant nitrogen fertilization. Because of it's slow release characteristics based on hydrolysis, IBDU releases nitrogen later in the fall and earlier in the spring promoting better rhizome and root growth. A fall fertilizer program using IBDU should produce healthier more vigorous turfgrass plants and reduce the severity of several turfgrass diseases.

Remember. Healthy turf next spring starts with IBDU this fall.

par ex®
PROFESSIONAL PRODUCTS

Estech, Inc.
Professional Products Division
P.O. Box 1996
Winter Haven, Florida 33880

PAR EX® and IBDU® are registered trademarks of Estech General Chemicals Corporation.

Circle No. 112 on Reader Inquiry Card

LETTERS

Thatch control lauded

I was so pleased with your article by R. N. Smiley, p. 38 *WTT*, April 1981 that I was spurred to comment and with the hope that more would be forthcoming.

I am not an erudite scholar on this subject but feel that it is so serious as to be central to greens management. Witness my April article in *Golf Business* and two previous editions. But, in our experience with greens that are built according to U.S.G.A. recommendations — Texas A.M.& C. specifications, endorsed by our eminent Alexander M. Radko Eastern Director Green Section, there is added reason to control thatch. Viz; with the old style method there was not much chance for thatch to develop, the roots were so shallow in highly compacted soil. But with mine, built 1969, there is plenty opportunity for accumulation which necessitated the various studies that I made.

Dr. Smiley has surrounded the subject very well; I applaud his effort.

Particularly illuminating are the references:

(1) to rates of decomposition of the various constituents of grass residues. Of significance is the comparatively slow rate of decomposition of phenolic compounds (6.5 years half life). I wonder, however, how you distinguish between lignin and phenolic compounds? Are they not joined in the same fibres? Is not lignin almost synonymous with peat, deposits of which have endured for thousands of years? And which suggest that the only way to dilute this kind of residue is by top dressing; the result of which is a green that grows higher and higher every year foretelling a very finite useful life.

(2) the statement "topsoil (but not sand) incorporated into thatch will help or prolong the available nitrogen supply (Beard 1973)"; earlier; "Nitrogen is essential for decomposition of organic litter." Which adds credibility to my recommendation that sand alone is a poor top dressing (April 1981-*Golf Business*) because it possesses no C.E.C. (cation exchange equivalent) to absorb nitrogen bearing ions but can be strengthened by the addition of clay, calcined clay or vermiculite.

(3) Smiley's recommendation for adjustment of pH by the use of lime is well taken and can be conveniently added mixed with the top dressing.

(4) I would take exception to his recommendation for moisture content, - 1 to - 5 Bars for peak levels for decomposition seems excessively low; - 1 Bar is practically saturated; there is no room for oxygen; I'd regard -10 -15 as being ideal and is the range we try to attain. When it gets to -20 it is time to apply water. With our instrument, the highest reading you can get is -80 but at -40 the soil is almost powder dry and if continued at this level you are going to generate a 'dry spot'.

I subjected three kinds of humus for one year to outdoor exposure and with some inoculation of cow and dog manure so the samples went through a gamut of dry-wet and cold-hot. At the end the dry weight had not altered significantly. The humus was from peat, peat moss, and the roots and thatch of old sod, ground, washed and sifted.

Of course our peat and brown coal deposits were protected from decomposition by water, excluding air and the upheavals caused by trees. But what about the accumulated layers of humus on drier ground?

There is much to learn.

(1.) On a green such as ours; are we gaining or losing on thatch.

(2.) How is it affected by the amount and frequency of top dressing, and

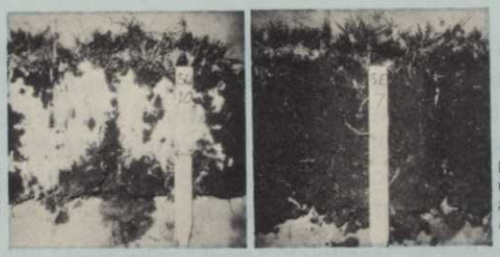
(3.) How could it be affected by the ratio of sand to clay—or calcined clay

We avoid excessive applications of fungicide (almost no insecticides) in the belief that they inhibit the soil fauna bacteria and fungi that help chew up the thatch. We also think that clay or calcined clay help by storing the "N" necessary for bacterial decomposition.

I would like to cooperate with Dr. Smiley, in so far as I can, in any studies that he wishes. This is not a new game for me: M.I.T. 1924-*Chem. Eng.*

Ernest Kallander
Stony Brook Golf Course
Southborough, MA

WATER PENETRATION
AQUA-GRO®
YOUR KEY TO FASTER SPRING GREEN-UP



Shallow rooted turf, poor moisture distribution, from area not treated with Aqua-Gro amended water.

Deep rooted turf, good moisture distribution from area treated with Aqua-Gro amended water.

Aqua-Gro gives faster Spring green-up • Reduces dew and disease potential • Enhances drainage and aeration, reducing potential problems caused by compaction • Helps establish heartier root system in Spring reducing summer stress problems • Prevents the formation of localized dry spots • Improves Spring insecticide applications for grubs.

AQUA-GRO is available in liquid concentrate or spreadable granular.
For free illustrated brochure call toll free 800-257-7797 or write to;

AQUATROLS CORPORATION OF AMERICA, INC.

1432 Union Ave., Pennsauken, New Jersey 08110 (609) 665-1130

Circle No. 105 on Reader Inquiry Card

Toro creates the ultimate low pressure, large radius Pop-Up.

Our new Toro Super 600 certainly lives up to its name: it's versatile, reliable and economical. And it's specially-designed to pass sand and silt right through it.

The Super 600 is also so remarkably compact, it's a breeze to install.

The New Toro Super 600

$19.95*

*Manufacturer's suggested list price subject to local dealer option.

We've re-invented irrigation, from the ground up.

TORO®

Irrigation Division

Circle No. 143 on Reader Inquiry Card

3 GOOD WAYS TO IMPROVE YOUR QUALITY, PRODUCTION, SERVICE AND PROFIT WITH BROUWER!

1. NEW BROUWER HITCH-HIKER

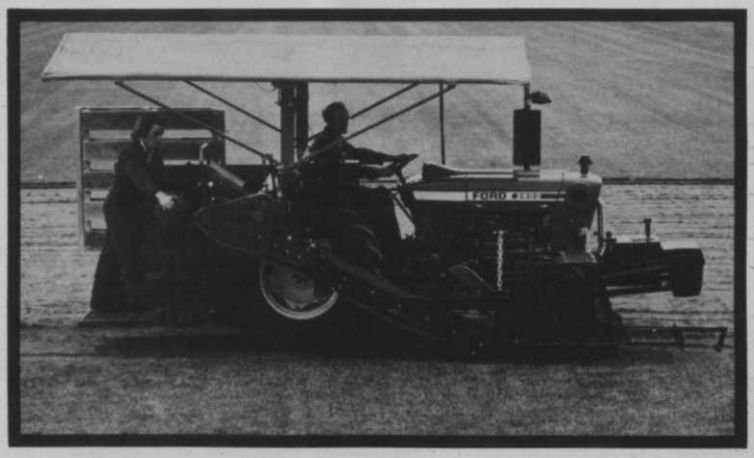
Another Brouwer innovation in material handling

- Simple, safe operation
- Very lightweight design
- Excellent performance on all terrain
- Quick hook-up and release to any truck
- 8" side shift for tight loading
- High transport clearance
- 19 HP Diesel Engine
- Mechanical Drive System
- Immediate Pallet Return

2. BROUWER ECONOMY HARVESTER

- Operate off uncut turf
- A more uniform cut
- Less down time
- Less top soil removal
- Available in 15, 16, 18 and 24 inch widths and choice of pallet sizes
- Cut, Roll, Slab or Fold 24 hours a day, wet or dry weather, all sod, all conditions.

Top Turf men around the world use Brouwer Harvesters to assure top profit.



ROLL

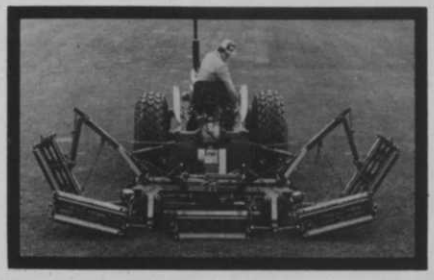
SLAB

FOLD

3. BROUWER PTO MOWERS

FEATURING HYDRAULIC LIFT

WRITE FOR FREE BROCHURES.



Brouwer PTO Mowers for economy, reliability and cutting the toughest grass.

- Easy to transport
- Smooth cut at a low cost
- Lightweight, high-stress steel frame
- Simple "no-wheel and gear" PTO Drive
- No wheel tracks
- Track remover available
- Yours in 3, 5 and 7 gang combinations

BROUWER

The Turf Equipment People

Circle No. 144 on Reader Inquiry Card

Brouwer Turf Equipment Limited, Woodbine Ave., Keswick, Ontario, Canada L4P 3E9 Tel: (416) 476-4311

PRODUCTS

The Hewlett Packard 250/30 is a versatile small computer that is designed for companies with annual revenues of up to $10 million, as well as

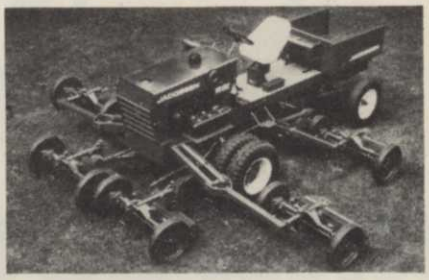
branch offices of larger firms. It can be shared by several people performing tasks such as accounting, order entry, inventory control, text processing and graphics preparation, from as many as six workstations at the same time. It also incorporates an enhanced mass memory system for more simple and rapid information storage and retrieval.

Circle No. 169 on Reader Inquiry Card

A hydraulic hole digger now enables the Princeton Piggyback Material Handler to dig holes from six to 36 inches in

diameter, according to the manufacturer. The hole digger utilizes the force of the forks that normally pushes up.

Circle No. 170 on Reader Inquiry Card



The F-10 self-contained turf tractor from Jacobsen Division of Textron is now available with two new high torque, fuel efficient engines. The 236 CID Perkins diesel engine generates 20% more torque and 13 more units of horsepower. The 236 CID Perkins gas engine delivers 7% more torque.

Circle No. 171 on Reader Inquiry Card

Continues on page 73

Circle No. 137 on Reader Inquiry Card

This magazine gives you good reading, good writing and good arithmetic.

We present the information in our articles clearly, accurately and objectively. That's good writing. Which means good reading.

We present the information in our circulation statement clearly, accurately and objectively. That's good arithmetic.

BPA (Business Publications Audit of Circulation, Inc.) helps us provide precise and reliable information to both advertisers and readers.

An independent, not-for-profit organization, BPA audits our circulation list once a year to make sure it's correct and up to date. The audit verifies your name, your company, your industry and your job title.

This information enables our advertisers to determine if they are reaching the right people in the right place with the right message.

The audit also benefits you. Because the more a publication and its advertisers know about you, the better they can provide you with articles and advertisements that meet your information needs.

BPA. For readers it stands for meaningful information. For advertisers it stands for meaningful readers. Business Publications Audit of Circulation, Inc.
360 Park Ave. So., New York, NY 10010.

BPA

We make sure you get what you pay for.

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION

Statement required by the Act of October 23, 1962, Section 4369, Title 39, United States Code, showing the ownership, management, and circulation of Weeds Trees & Turf, published monthly at One East First Street, Duluth, Minnesota 55802, as filed September 21, 1981.

The name and address of the Publisher is: Dick Gore, 3091 Maple Drive, Maple Center One Building, Atlanta, Georgia 30305.

The owners are: Barclays Nominees Branches Limited, 4 George Yard, Lombard Street, London E.C. 3, England; Cede & Co. c/o the Depository Trust Co., Box 7547, Church Street Station, New York, New York 10249; Mrs. Katharine Brace Cummings, c/o Ernst, Cane, Berner & Gitlin, 7 West 51st Street, New York, New York 10019; Ellen Knowles Harcourt, William I Jovanovich & Peter J. Ryan as Ttees U-T-A Dtd 5/23/66, c/o First National City Bank A-C, P. O. Box 2781, Grand Central Station, New York, New York 10043; Mrs. Thekla E. Johnson, 19 Hewitt Avenue, Bronxville, New York 10708; Mr. Walter J. Johnson, 19 Hewitt Avenue, Bronxville, New York 10708; Mr. William Jovanovich, P. O. Box 490, Briarcliff Manor, New York 10510; Mr. Martin Revson, 19th Floor, 445 Park Avenue, New York, New York 10022; Rice & Co., c/o Agency The Toronto Dominion Bank, 42 Wall Street, New York, New York 10005; Shaw & Co., c/o Morgan Guaranty Trust Company of New York, P. O. Box 491, Church Street Station, New York, New York 10008; Mr. Joseph C. Sindelar, 794 Park Boulevard, Glen Ellyn, Illinois 60137; Mr. Robert J. Sindelar, 80 Colonia Miramonte, Scottsdale, Arizona 85253; Kray & Co., P. O. Box 10645, Neward, New Jersey 07101; Pacific & Co., P. O. Box 7014, Church Street Station, New York, New York 10249.

The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities are: None.

Names and addresses of individuals who are stockholders of the corporation which itself is a stockholder of the publishing corporation have been included in the two paragraphs above when the interests of such individuals are equivalent to 1 percent or more of the total amount of the stock or securities of the publishing corporation.

Average number of copies of each issue during preceding 12 months, and of single issue nearest to filing date, respectively, are as follows: Total number of copies printed (net press run) 46,455 - 46,220; paid circulation (1) sales through dealers and carriers, street vendors and counter sales 0 - 0; (2) mail subscriptions 5,859 - 5,741; total paid circulation 5,859 - 5,741; free distribution by mail, carrier or other means (1) samples, complimentary, and other free copies 39,520 - 39,766; (2) copies distributed to news agents, but not sold 0 - 0; Total distribution 45,379 - 45,507; office use, left-over, unaccounted, spoiled after printing 1,076 - 713; total 46,455 - 46,220.

I certify that the statements made by me above are correct and complete.

(signed) Joe Bilderbach, V. P. Circulation

Perform a death-defying act.

Give Heart Fund.

American Heart Association

mott HAMMER KNIFE

Flail Mowers can cut your TURF CARE COSTS

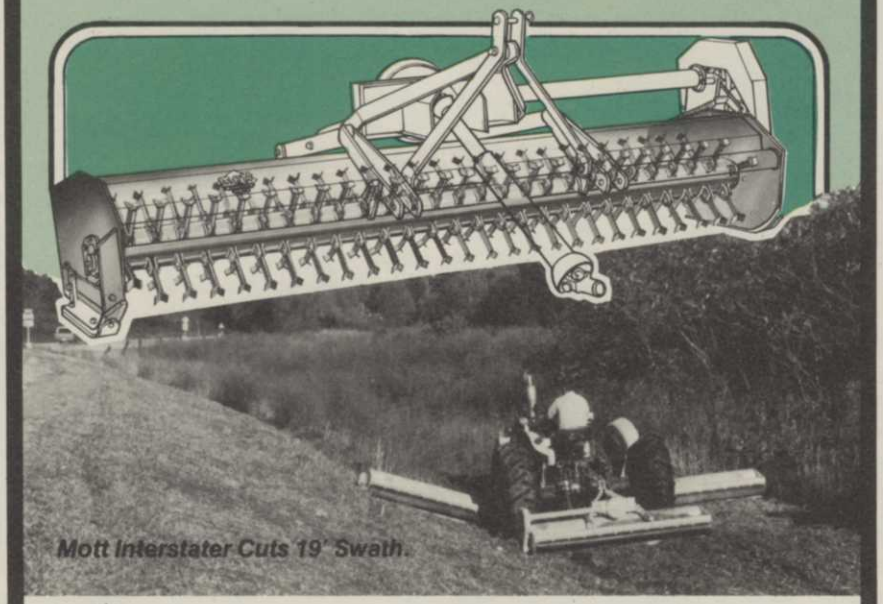
Mott Flail Mowers reflect extra value through greater versatility, added production with longer trouble-free life, and safer operation.

No other mowing system is as versatile as the flail. With only one mower investment, you can trim fine lawns, shred tough weeds, mulch, renovate, dethatch and scalp. You can work any area that is smooth or rough, clean or trashy, level or steeply banked, dry or "liquid wet". And you can operate with much greater safety than with rotary mowers.

Mott Flail Mowers are built to last and can be used with most tractors. Models are available in widths from 38 to 88 inches. In combination, they will handle up to 19 foot swaths.

Contact us today and discover how the extra value of Mott Flails can pay off by cutting your turf care costs.

MOW LAWNS ■ RENOVATE ■ MULCH LEAVES ■ SHRED WEEDS



Mott Interstater Cuts 19' Swath.

mott HAMMER KNIFE

MOTT CORPORATION 514 Shawmut Avenue
P.O. Box 518, LaGrange, IL 60525 (312) 354-7220

Circle No. 128 on Reader Inquiry Card

CASE STUDIES:

The compact trencher with a bagful of tricks: 25+4.

Most times the best player on the course is the one who makes all the shots. Long and short. Around trees. Through narrow openings. In all kinds of conditions.

That's just the kind of trencher the Case 25+4 is. A total player. With the compact D70 backhoe, a fully hydraulic backfill blade, and trenching capability to 66" (1676 mm) deep, the 25+4 can handle the toughest hole on your course. Whether it's for installation of sprinkler systems. Drainage work. Tree planting. Or just about anything.

At 23 hp (17 kW) it gives you a perfect balance of power and economy. It's articulated and has 4-wheel hydrostatic drive. So it'll probably never get trapped someplace you don't want it. And it won't tear up the turf getting to and from jobs.

The 25+4 is easy to operate and service. New amateurs quickly learn how to use it. And old pros just love it.

The Case 25+4. The ideal trencher for golf course maintenance. The compact trencher with a whole bagful of tricks.

J I Case
A Tenneco Company

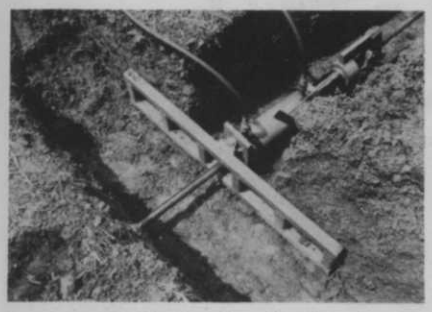
TENNECO

Construction Equipment Division
700 State Street Racine, WI 53404 U.S.A.

Circle No. 108 on Reader Inquiry Card

case®

The Porta-Pusher I from Vermeer Manufacturing Co. is a portable tunneling unit which installs services up to 8.5 inches in diameter. The units



features a "hollow" cylinder design which places all the "push" directly on the rod without the need for external leverage devices. It is extremely fast and accurate, according to the manufacturing, and is designed especially for highways, streets and sidewalks.

Circle No. 172 on Reader Inquiry Card

The Medallion Grinder is a rotary hopper grinder that can be used to grind leaves, tree trimmings, orchard prunings, bark and scraps from sawmills. The end product may be used as fuel,

seed cover, mulch, compost and landfill. The unit is self-contained and mobile, featuring a diesel power unit and conveyor.

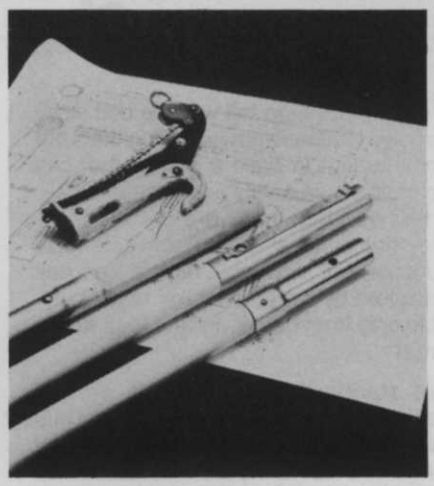
Circle No. 173 on Reader Inquiry Card

The Hahn Spreader is an oscillating-action unit which mounts directly for the frame of the Hahn Spray-Pro and is powered by its engine. The micro-

meter-type settings are adjustable from 12 to 45 ft.

Circle No. 174 on Reader Inquiry Card

Seymour Smith & Son's Snap-Cut reinforced fiberglass tree pruner poles are designed to provide added strength and durability at a cost comparable to

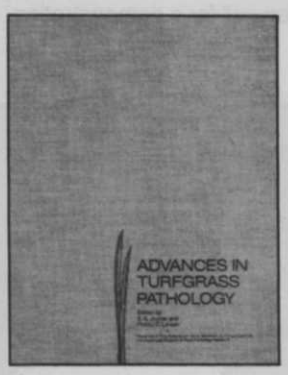


wooden poles. They feature a dielectric strength of 25,000 volts and DC current leakage does not exceed 90 microamperes when a 90 kilovolt charge is applied, according to the manufacturer.

Circle No. 175 on Reader Inquiry Card

Advances in Turfgrass Pathology

published by HARCOURT BRACE JOVANOVICH PUBLICATIONS in cooperation with Dr. B. G. Joyner, Dr. P. O. Larsen and Chemlawn Corporation



This extensive volume contains chapters on:

- turfgrass diseases
- cool v.s. warm season pythium blight and other related pythium problems
- snow molds of turfgrasses
- fairy rings
- leaf spot of Kentucky Bluegrass in Minnesota
- initial and filed fungicide screening
- turfgrass disease resistance
- PLUS MUCH MORE!

$27.95* (hardcover)
$18.95* (paperback)

COPIES LIMITED — DON'T DELAY!

ADVANCES IN TURFGRASS PATHOLOGY is a compilation of more than 23 reports and discussions by the nation's leading turfgrass pathologists. Explore the diseases that attack turfgrass. Find out how to conquer the battle of turfgrass diseases.

KEEP CURRENT WITH NEW IDEAS ON HOW TO HANDLE TURFGRASS PROBLEMS WITH ADVANCES IN TURFGRASS PATHOLOGY.

Return this coupon to: Book Sales
Harcourt Brace Jovanovich Publications
One East First Street, Duluth, MN 55802

YES! Please send me _____ copy(ies) of ADVANCES IN TURFGRASS PATHOLOGY.

Name _____
Address _____
City _____ State _____ Zip _____
Phone _____

$27.95* hardcover $18.95* paperback
Quantity rates available on request.

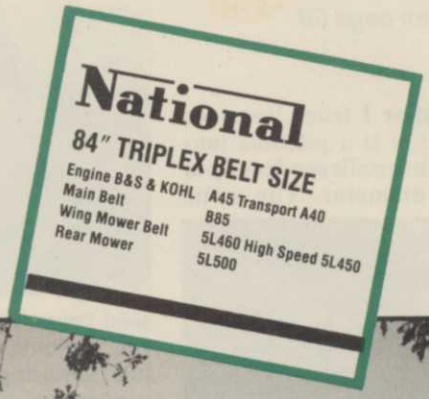
A check or money order for _____ is enclosed.

*Please add $2.50 per order plus 25¢ per additional copy for postage and handling.

Please charge to my Visa, Master Card, or American Express (circle one)
Account Number _____
Expiration Date _____
Please allow 6-8 weeks for delivery. WTT11

You'll find one on every National . . .

The little decal that means big savings!



It does more than tell you the belt sizes used on National mowers. It signifies our commitment to build a mower that can be maintained easily and inexpensively. It tells you that these are standard, off-the-shelf items available from your local supplier, not a special, high-priced belt designed by a manufacturer to be available only from him. **It means less down time!**

But standard belts are only part of National's value. There's the normal maintenance factor which is reduced by National's obviously easy accessibility. Field reports tell us that **National mowers are one-third to one-half the cost** of maintaining competitive models.

Then there's greater fuel economy. National's simple, functional design means as much as 44% to 62% less fuel consumption than competitive, power-robbing, hydrostatic type rotary machines.

Best of all, **National's initial cost is less** than that of other mowers sold to do the same job.

In these days when purchase price, fuel economy, continuous performance and longevity are most important, look to a National to do more work, with easier and faster maintenance, over a longer period.

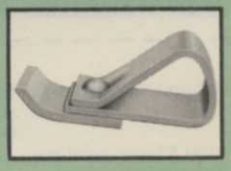
Model 84" Triplex

Write to us for the name of your nearest dealer. Then call for a demonstration.

Model 68" Triplex

There's more to make you forget about down time

We still cut our own gears, forward, reverse and differential, out of solid steel blanks. These durable gears, carborized, hardened and tempered, are heavier than those used in many automobiles today.



Bed knives have upturned lips for extra wear and longer service. It prevents scalping and will not allow small objects to enter and damage reels.

★ ★ ★ NATIONAL MOWER

NATIONAL MOWER COMPANY

660 Raymond Avenue
St. Paul, Minnesota 55114
612/646-4079

Circle No. 129 on Reader Inquiry Card

CLASSIFIEDS

RATES: 75 cents per word (minimum charge, $20). Bold face words or words in all capital letters charged at $1.00 per word. Boxed or display ads charged at $70 per column inch (one inch minimum). Agency commissions will be given only when camera-ready art is provided by agency. For ads using blind box number, add $5 to total cost of ad. Send ad copy with payment to Dawn Anderson, WEEDS, TREES & TURF, 1 East First Street, Duluth, MN 55802.

BOX NUMBER REPLIES: Mail Box number replies to: WEEDS, TREES & TURF, Classified Ad Department, 120 W. 2nd St., Duluth, MN 55802. Please include box number in address.

USED EQUIPMENT

HI-RANGERS AERIAL BASKETS 65', 57', and 53'. Skyworkers aerial baskets 65', 50', 40'. Vermeer stump cutter 1560,6. Vermeer tree spade 66, TS 44. Asplundh bucket and brush chippers. Bean sprayer, 9 ton trailer. Parkway Tree Service, 12026 W. Cherry, Wauwatosa, Wisc. 53226. (414) 257-1555. TF

HI-RANGER BUCKET TRUCKS, 54' and 51', Flatbed and chip box mitts - Merrill brush chipper. Allied Enterprises, Inc., W. 204 N. 11509 Goldendale Rd., Germantown, WI 53022, (414) 255-6161 anytime. TF

BUCKET TRUCKS, SPRAYERS, MIST Blowers, Chippers, Log Splitters, Stump Grinders. Largest selection of reconditioned arborist equipment in the Northeast. Call or write with your needs. **ESSCO,** 584 **WEST HOFFMAN AVENUE, LINDENHURST, N.Y.** 11757. (516) 226-5115. 3/82

1980 TS50M Vermeer Tree Spade — mounted on 1978 International 1700 four wheel drive with Allison automatic transmission, lock differential, free wheel hubs, tool box, cab rack. 11,000 miles. Like New! $26,500. Jones Bros. Tree Company, 7038 Highway 72, Germantown, TN 38138. (901) 754-7716.

2 - 8' JACOBSEN LAWN AERATORS with hydraulic lift wheels, have spike teeth or plugs, units are joined to make 16' machine, very good condition. Total price $5,500.00. Emerald Green Sod Farms, Inc.; P.O. Box 663; Naperville, IL 60565. Phone (312) 898-8680. 11/81

For Sale: Vermeer stump diggers; 1978, Model 630A, $3500. 1973, Model 10, $2500. Hardy sprayer, 35 g.p.m. $500. Retired. 1 (816) 444-9004. 11/81

(2) Model 10 Vermeer Stump Cutters—Price: $6,500.00 and $5,000.00. (1) Model 18 Vermeer Stump Cutter with 36" cutting Wheel—Price: $5,000.00. All in good condition. **FUNK BROS. TREE SERVICE, INC.—ASHLAND, OH. PHONE:** (419) 325-2113. 11/81

Friend Skid Mounted Sprayer, 500 gal., model #GXAS50SKS with pump and Wisconsin engine. Johnson Hydro Seeding, Rockville, MD (301) 340-0805. 11/81

7 gang Brouwer PTO Mower, Excellent, used 2 seasons $5000; 7 Jacobsen Blitzer mowers, solid rubber—5—10" blades, excellent shape $350 each, 1 Robark net setter with 10 rolls net, used on 40 acres, $4000 or $5500 with net—would consider trade above items for irrigation pipe. Selstad's—(406) 452-5158. 12/81

BOWIE 1100 GALLON HYDROSEEDER—gooseneck, 1 year old, perfect condition. Ready to use. **BOWIE 350 GALLON HYDROSEEDER**—good condition. Runs like new. Call Harry Thompson at (713) 464-0016 or (713) 465-3606.

1978 PRENTICE MODEL 110 LOG/BRUSH LOADER with 310 grapple. Nice size for tree work. EXCELLENT condition. Madison Truck Equipment, Inc., Madison, Wisconsin. (608) 222-5591. 11/81

Jacobsen 524-100 Self propelled Aerator, Dethatcher, Overseeder. Used 10 hours, Mint condition. WRIGHT Lawn Spray—East Amherst, NY 14051 (716) 741-3336. 12/81

Backhoe mounted on 1974 International pickup 4x4 dual wheels, 36,000 miles, new paint. Digs 8 feet deep. Excellent condition. $6,000. Richard Trapasso, Kew Gardens, NY, (212) 849-5140.

1974 Skyhook crane, 100HD good condition. 1970 Vermeer 1560 stumper, rebuilt. Best offers. Page Hill Corp., Winterport, ME (207) 223-4655. 11/81

MISCELLANEOUS

GROUNDS MANAGERS - Join your own professional society. Monthly newsletter, membership directory, certification, annual conference and trade show, and many other membership benefits. Contact: PGMS, Department WTT, 7 Church Lane, Pikesville, MD 21208. 11/81

KELWAY® SOIL ACIDITY TESTER, used by PROFESSIONALS nationwide. Direct reading, lightweight, portable, fully serviceable, no power source. Model HB-2 reads moisture too. Available through distributors. For brochure contact Kel Instruments Co., Inc., Dept. T. P.O. Box 1869. Clifton, N.J. 07015 (201) 471-3954.

LANDSCAPE DESIGN KIT, 37 rubber symbol stamps, ink pad, $38.50 postpaid. California add $2.16 tax. Stamps kit brochures available. American Stamp Co., Box 741, Dept. WT, Reseda, California 91335. Phone (213) 881-2808. TF

HELP WANTED

CORPORATE FIELD REPRESENTATIVE—Responsibilities center around servicing and advising our lawn and tree care franchises in Northern Illinois and Indiana. Within a year or two, there is a possibility of transferring to another city to manage the servicing of our franchises in that area. The ideal candidate will have at least Assistant Branch Manager experience and a good working knowledge of lawn care. A personable manner and well developed communication skills are a must. This is an exceptional opportunity with a young, but prominent, lawn and tree care company which is expanding and growing tremendously. Competitive salary and benefits. Send resume and salary history/requirements to: Spring-Green Lawn Care Corp., P.O. Box 908, Naperville, IL 60566. 12/81

PUBLIC NOTICE: NOTICE IS HEREBY GIVEN that the Board of County Commissioners of Citrus County, Florida, is receiving resumes from qualified consultants in the field of aquatic plant control. The Board is seeking a consultant who will survey Citrus County's existing aquatic weed program and present to the Board a written plan for improvement. QUALIFICATIONS: Education: B.S. Degree in fisheries, aquatic or related major, and five years experience in aquatic plant control in a responsible, supervisory position, within the State of Florida. Seven years of experience may be substituted for the B.S. Degree. Must be certified, by the State of Florida, for application of aquatic herbicides. Must have experience in field application techniques for all forms of aquatic herbicides and the pertinent application equipment. Must furnish five references for similar project. All resumes shall be submitted to the Office of the County Administrator, 110 N. Apopka Ave., Inverness, Florida 32650 on or before November 30, 1981.

BRANCH MANAGER: Chemical Lawn Care firm is accepting applications for Managerial position. Must be experienced in route and service type business, responsible for sales personnel and administration. Must be willing to relocate in Ohio, Indiana or Kentucky areas. Write WTT Box 270. 11/81

OUTSIDE LANDSCAPE SUPERVISOR seeking individuals with experience in large scale landscape. Knowledge of all types lawn equipment and supervisor experience preferred. Salary in the mid-teens. Excellent benefits. Send resume to P.O. Box 58420, Dallas, TX 75258-0420. 11/81

TURF MANAGERS' HANDBOOK

By Dr. William Daniel and Dr. Ray Freeborg

$18.95* hardcover
$14.95* paperback

This essential reference book covers:

- scope and organization
- grasses and grooming
- rootzones and water
- nutrition
- pests and controls
- uses of turf
- serving turf needs
- AND MORE

The TURF MANAGERS' HANDBOOK is an easy on-the-job reference to planning, purchasing, hiring, construction, and plant selection. These 424 pages contain 150 illustrations, 96 color photographs plus 240 tables and forms.

ORDER YOUR COPY NOW!!!

Ordering information

Please send_____copies of the hardback ($18.95* ea.)
_____copies of the paperback ($14.95* ea.)
Quantity rates available upon request.
*Please add $2.50 per order plus 25¢ per additional copy for postage and handling.
Please charge to my Visa, Master Card, or American Express (circle one)
Account Number_____
Expiration Date_____
Please allow 6-8 weeks for delivery.

Signature_____
Name (print)_____
Address_____
City_____State_____Zip_____
Phone_____

Send to: Book Sales
Harcourt Brace Jovanovich Publications
One East First Street
Duluth, MN 55802
WTT11

ASSISTANT GOLF COURSE MANAGER—State of New Jersey seeks individual to assist manager in all phases of golf operation. Responsibilities include building and grounds maintenance, pro-shop operation, records and correspondence, planning, budget preparation, hiring, purchasing and the opportunity to participate in an ambitious capital improvement program including the construction of new holes and installation of an irrigation system. Applicants should possess a 2 year turf certificate—Bachelor Degree beneficial. Send resume to Spring Meadow Golf Course, Box 396, Farmingdale, NJ 07727. 11/81

Arborist Representative: Sales & Supervision in metropolitan Philadelphia & Suburbs. Must have experience in tree care, basic knowledge of turf management, and landscape installation. Base pay plus commission, insurance, paid vacation and holidays. Contact Melinda Miller, or send resume to McFarland Landscape Services, Inc., 255 W. Tulpehocken St., Philadelphia, PA 19144. (215) 438-3970. 11/81

Salesman—Grass Seed—We are actively seeking an individual with extensive experience in grass seed sales to call on hardware stores, garden centers and other seed users. Background in turf related chemicals, fertilizer and other lawn care products important. Excellent company benefits. Strictly confidential! Contact: Ivan Olinsky, Vaughan's Seed Company, Chimney Rock Road, Bound Brook, NJ 08805. (201) 356-4200. 11/81

WANTED

WANTED—Good Used Straw Blower. (812) 332-0009. 11/81

Bean Pumps 35 gallon—60 per minute. Wisconsin Engines. Spray Tanks—600-1000 gallons. Write: Grove Garden Landscape Co., P. O. Box 321, Sharon, MA 02067. Or call: (617) 784-5109. 11/81

Large Lindig & Royer Soil Shredders, Lewis Equipment Company, 320 Third Street, SW., Winter Haven, Florida 33880. (813) 294-5893.

POSITION WANTED

Employment Wanted—Custom Applicator looking for work in Sunbelt area this winter. Excellent with sales and service and have management experience. Background includes pest control operator in California, two years of horticulture college in California, two years as a licensed landscape contractor in California. Have a current Custom Applicator's license in Ohio. Total of five years experience in the field. Also have 700-gallon spray rig, an aerator, a thatcher and would consider subcontractor work. Write WTT Box 281. 11/81

Pro/Manager at large facility in the Midwest seeks similar position in same size or smaller club in the Southeast. For resume and references send replies to WTT Box 278.

BUSINESS OPPORTUNITIES

For those involved in Grounds Maintenance, Lawn/Tree/Shrub Care, or Landscaping. GARDEN TIPS. The proven BUSINESS BUILDER—PROFIT MAKER for everyone serving the homeowner market. IT'S **YOUR** MONTHLY NEWSLETTER TO YOUR CUSTOMERS. It says "Hello" to your customers each month for you—because **you** don't have the time! And it SELLS. It sells you as a PROFESSIONAL. It sells your service. "Garden Tips" is sent to you ready to mail. A first-class piece—items of interest include lawn care, shrub and tree care, vegetable and flower planting, and houseplant care. Written for quick, entertaining and compact nuggets of information. Our present subscribers report back 95-98% readership (by their own surveys) and substantial sales and new business directly attributable to "Garden Tips." Best of all—it's low in cost. Call or write (516) 483-0100, "Garden Tips", Box 117, Garden City, NY 11530 for more information. 11/81

An opportunity of a life-time for the right person with a background in the Industry, to own a well established Landscape Construction, Lawn Maintenance and Nursery Business, located in a rapidly growing commercial/industrial Northwest Chicago Suburban area, consisting of the following: 8 acres of land, including 4 acres of 1,000 prime specimen trees, calipered at 3"-5" min., modern large office, 5 bay fully equipped garage and service shop, storage buildings, and a leased income building. All large, and small equipment necessary to operate this type of business, also truck mounted snow removal equipment, a ¼ acre pond and paved road and lot, 2,000 gal. diesel and gas tanks. A long list of prestigious clients with income of $1,000,000 to $1,500,000 annually. Over 22 years as an established business in the Industry. Huge growth potential. Minimal down payment and pay-back over a 4 year period with very low interest available. Owner to stay on to help the right person establish themselves. This opportunity only comes along once in a life-time, take advantage of this offer. For more details, please direct all inquiries to: Willow Hill Nursery, P. O. Box 117, Prairie View, IL 60069. 11/81

WANT TO BUY OR SELL a golf course? Exclusively golf course transactions and appraisals. Ask for our catalog. McKay Golf and Country Club Properties, 15553 N. East Street, Lansing, Michigan 48906. Phone (517) 484-7726. TF

COLORADO NURSERY — This 10 year established business has snowplowing in the winter, nursery and landscaping in the summer. Assets over $200,000. Sales ½ million with high growth potential. Equipment includes 3 loaders, 2 dump trucks and 8 pickups with snowplow blades. Price: $350,000, $150,000 down. Balance at 10% over 5 years. Voliter Nursery, 1030 So. Frontage Rd., P.O. Box 881 VAIL, COLORADO. (303) 476-3047.

FOR SALE

Used Spray Units For Sale

1,250-gallon stainless steel tanks. Mechanical agitation. FMC 20 gallon/minute pump. Hanney electric reel. Ford F600 and Chevy C60's— '76's, '77's, '78's and '79's.

Call (502) 241-7341.

12/81

MOWERS FOR SALE OR TRADE WILL DELIVER ANYWHERE. 3—7 foot Bush-Hog pull type Rotary Mower; 1—6 foot Bush-Hog 3 point mounted Rotary Mower; 1—4 foot Rhino 3 point mounted Rotary Mower; 1 Dixon 42" cut Riding Mower, Trans-Axle Drive; 3—Commercial Model Gas Powered Green Machine Weed Whips. **ALL THE ABOVE NEW IN SPRING 81.** Lamar Seeding, Inc., P.O. Box 84, Wamego, Kansas 66547. Call collect (913) 456-9117. 11/81

Fertilizer Distributor—Holds 100 lbs. Stainless steel box, fan and agitator. Fertilizer box in front—like a riding lawn mower. With box up front, you can get up to any area. It is superior to fertilizer in the rear; will do the work of 3 men with walking distributor. To the best of our knowledge there is nothing like this on the market. General Spray Service, P.O. Box 1316, Ocala, FL 32678. (904) 694-3222. Ask for Oliver Godwin. The best time to call between 5 & 6 PM, EST. 11/81

Nursery and Retail Garden Center for sale, 50' x 60' retail store, 30' x 96' greenhouse, 3 shade houses and equipment shed on 1.94 acres. Complete stock inventory included. Four year old established business. Owner financing available. Contact Gary Orsak, Green Acres, 3110 Sparks Road, Bay City, Texas 77414. 11/81

Used Spray Trucks—Chevy, 700-gallon tanks. Automatic hose reels, mechanical agitation. Call Ron Wilson, (513) 845-0517. 12/81

Completely overhauled and dielectrically insulated 45' Sky-Workers—For Sale and Rent. 90 day guarantee on sales. Call Aerial Lift, Inc., Milford, Conn. (203) 878-0694. TF

LAWN SEED. Wholesale. Full line of top quality grasses. Improved bluegrass varieties, fine fescues and fine bladed ryegrasses. We specialize in custom mixing. Oliger Seed Company, 2705 Wingate Avenue, Akron, Ohio 44314. Call collect (216) 753-2259. 1/82

480 lbs. Dacthal W-75 in 4 lb. bags. All or part of. Call (507) 452-6237 or after 6 P.M. (507) 452-1409. 11/81

SKYWORKER AERIAL BUCKETS: Sales, Parts and Service. New and used units available to 65 feet. New and Used brush chippers, Hydro Ax's, used stumpers, sprayers and digger derricks also available. Call or write P. C. GOULD SALES COMPANY, Plains Road, Essex, Conn. 06426. (203) 767-1636. 12/81

NEW RAVEN 38" diameter 300 gallon fiberglass tanks with 18" hinged manway at wholesale prices. Call (502) 366-1415. TF

ADVERTISERS

Reader Inquiry No.		Page No.
	Adelphi	57
102	Andersons	70
103	Andersons	25
104	Asplundh Mfg. Division	56
105	Aquatrols Corp. of America	64
144	Brouwer Turf Equipment Ltd.	66
106	Bunton Co.	CV3
107	C.I.L. Inc.	27
108	J. I. Case	72
109	John Deere & Co.	38, 39
110	Ditch Witch Equipment	1
111	Eagle Vehicles, Inc.	53
112	Estech, Inc.	63
113	Excel Industries, Inc.	3
114	Clifford B. Hannay & Son, Inc.	62
115	Harley-Davidson Motor Co., Inc.	43
116	Industrial Leasing Corp.	60
117	International Seeds, Inc.	13
119	Jacobsen	41
120	Kubota Tractor Corp.	15
121	Lofts Seed, Inc.	CV4
122	Lofts Seed, Inc.	CV4
123	Mallinckrodt, Inc.	51
142	Milwaukee Metro. Sewerage Dist.	4
124	Mitsubishi Tractor Division	49
125	Mobay Chemical Corp.	19-22
126	Mobile Aerial Towers, Inc.	55
127	Monsanto Co.	61
128	Mott Corp.	71
129	National Mower Co.	74
130	Prentiss Drug & Chemical Co. Inc.	23
131	Rain Bird	CV2
132	Rhone Poulenc Chemical Co.	16, 17
133	Rhone Poulenc Inc.	31-34
134	Rhom & Haas	37
135	Rugby Kentucky Bluegrass	46-47
136	Snowco	28
137	Solo, Inc.	69
138	Stanley Hydraulic Tools	18
139	Tee-2-Green Corp.	7
140	Toro Co.	59
143	Toro Co.—Irrigation Division	65
141	Turf Seed Inc.	29

This index is furnished for the readers' convenience. However, the publisher can not guarantee its accuracy due to circumstances beyond our control.

1. TRACTORS: For the big jobs. Your choice of gasoline or diesel engines and a variety of attachments let Bunton tractors do much more than just cut grass.

2. PUSH MOWERS: For the small jobs. All Bunton push mowers are equipped with the best engines that the manufacturer builds. Even then, they have the reputation for outlasting several engines.

3. EDGER-TRIMMER: Versatile, describes Bunton edger-trimmers. The adjustable 10-inch model edges curbs as easily as walk-ways. An athletic field line cutter attachment is available.

4. SELF-PROPELLED: Real workhorses! Many options allow Bunton self-propelled mowers to be practically custom-built to meet specific mowing needs. Available in 24, 28, 32, 36 and 52 inch cuts.

Bunton builds 76 different mowers, many with optional engines, attachments and features.

Contract numbers:
G.S.A.: GS-07S-06286
H.U.D.: OPH (CO)m-3217

Bunton builds 'em better.

BUNTON CO.

P.O. Box 33247
Louisville, KY 40232 U.S.A.
Phone: 502/969-0550 Telex: 204-340

Fuel cost, maintenance, downtime and grass... Bunton cuts it all.

BUNTON

Circle No. 106 on Reader Inquiry Card

The shot heard 'round the Turf world:

Yorktown II

Turf-Type Perennial Ryegrass

Four-Year Performance of commercially available varieties of perennial ryegrass at Rutgers University, North Brunswick, New Jersey proves Yorktown II is so good it's Revolutionary!

Cultivar	1974-1977 Average*	Cultivar	1974-1977 Average*	Cultivar	1974-1977 Average*
1 Yorktown II	7.3	7. Citation	6.1	13. NK-200	3.8
2. Blazer	6.7	8. **Yorktown**	6.0	14. Eton	3.8
3. Fiesta	6.5	9. Derby	5.8	15. Pelo	3.1
4. **Diplomat**	6.3	10. Birdie	5.6	16. NK-100	2.7
5. Dasher	6.2	11. Pennfine	5.3	17. Game	2.5
6. Omega	6.1	12. Manhattan	5.0	18. Linn	2.2

*Turf performance score: 9 = Highest Possible Score.

Four years of testing, during some of the most severe weather conditions in recent years, proved Yorktown II number one in overall turf quality . . . based on criteria including appearance, heat and cold tolerance, density, mowing quality and disease resistance. No wonder Yorktown II is so good . . .

It's Revolutionary

Circle No. 122 on Reader Inquiry Card

From the producers of Baron Kentucky Bluegrass.

Available through all Lofts divisions and leading seed houses.

LOFTS

Lofts Seed Inc.
Bound Brook, N.J. 08805 / (201) 356-8700